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THE NIMBUS 5 DATA CATALOG
VOLUME 1

19 DECEMBER 1972 THROUGH 31 JANUARY 1973
DATA ORBITS 104-693

GODDARD SPACEFLIGHT CENTER
GREENBELT, MARYLAND

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THE NIMBUS 5 DATA CATALOG

Volume 1

**19 December 1972 through 31 January 1973
Data Orbits 104 through 693**

Prepared by

**Allied Research Associates, Inc.
Baltimore, Maryland**

For the

ERTS/Nimbus Project

May 1973

**GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland**

FOREWORD

This is the first volume of a series of catalogs published by the National Aeronautics and Space Administration to document data acquired from the Nimbus 5 Meteorological Satellite. This volume covers the period from 15 December 1972 through 31 January 1973 with subsequent catalogs to contain documentation for succeeding periods throughout the useful lifetime of Nimbus 5.

Background information concerning the Nimbus 5 Meteorological Satellite system and a description of the experiments and data formats have been published separately in The Nimbus 5 User's Guide, with post-launch User's Guide information changes and corrections included in the data catalogs. The Nimbus 5 catalogs present the type of data available, anomalies in the data, if any and geographic location and time of the data.

The assembly and editing of this catalog was accomplished by Allied Research Associates, Inc. (ARA), Baltimore, Maryland, under contract number NAS 5-21617 with the Goddard Space Flight Center, NASA, Greenbelt, Maryland

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Project Manager
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SECTION 1

SUMMARY OF OPERATIONS

1.1 Introduction

Nimbus 5 was successfully launched from the Western Test Range at Vandenberg AFB, California, into a near circular orbit (1089 km x 1102 km) at 07 hr 56 min 00 sec GMT on 11 December 1972. All experiments and subsystems were successfully turned on. Satellite operations from launch (11 December) through orbit 103 (18 December) consisted of engineering evaluation of all spacecraft systems. As a result of that effort, data reception, accountability, and processing were intermittent during that period. Therefore, this catalog reflects documentation from orbit 104 (19 December 1972) through orbit 693 (31 January 1973).

The sensory data output and total operating time from launch through orbit 693 were as follows:

ESMR	1095 hours
ITPR	1098 hours
NEMS	1100 hours
SCR	1098 hours
THIR	1100 hours

SCMR-Direct 2 hours (No useable SCMR data was
recorded after orbit 320.
See Section 1.3)

Recorded 6 hours

Deviations from nominal attitude occurred during this catalog period. Pitch was made to alternate between +2.9 degrees and +3.5 degrees according to Table 1-1. A suspected roll bias was investigated, with results described below confirming its existence. Yaw was held within nominal bounds.

A positive pitch angle of 2.9 degrees moves the principal point 55.6 km behind the sub-satellite point, while a positive pitch of 3.5 degrees moves the point 66.7 km. When the spacecraft undergoes pitch, a scanner type instrument no longer scans the earth along a great circle arc, but scans along the small circle formed by the intersection of the scan plane with the earth. Since the plane of the small circle is tilted with respect to the nominal scan plane, points on the arc are displaced farther from the great circle as the scan angle increases. As noted above, a pitch angle of 3.5 degrees causes a displacement of 66.7 km at the principal point, but when the scanner turns 45 degrees away from the principal point, the displacement grows to 74.1 km. Thus, although the instrument records in lines normal to the orbit plane (in the absence of yaw), the displacement is not uniform across the scan line.

Table 1-1

**NIMBUS 5 PITCH BIAS HISTORY FROM ORBIT 104 (19 DECEMBER
1972) THROUGH ORBIT 693 (31 JANUARY 1973)**

DATE	Pitch Bias	+2.5°	+3.5°
12/19-12/21			104-134R
12/21-12/22		134R-151A	
12/22-12/28			151A-226R
12/28-12/29		226R-249A	
12/29-1/2			249A-302A
1/2-1/6		302A-347R	
1/6-1/9			347R-397A
1/9-1/13		397A-440W	
1/13-1/16			440W-488A
1/16-1/20		488A-539A	
1/20-1/23			539A-583A
1/23-1/31		583A-693A	

(R=Rosman, North Carolina; A=Fairbanks, Alaska; W=Winkfield, England)

As mentioned above, a suspected roll bias was investigated. The method consisted of measurement of lengths (on the paper Visicorder plots) of scan data from the Temperature Humidity Infrared Radiometer, the conversion of these lengths to equivalent scanner angles, and the comparison of these inferred (observed) angles with their theoretical values. Discrepancies can be interpreted as roll errors. Figure 1-1 shows the least squares curve of best fit to the observed roll bias values found by this method, for each of the two orbits analyzed. Table 1-2 is a summary of the results.

Table 1-2

AVERAGE NIMBUS 5 ROLL BIAS VALUES FOR ORBITS 336 AND 662

Date	Orbit	Average Roll Bias (deg.)	Max. Departure from Average Bias (deg.)
5 Jan. 73	336A	0.64	0.30
26 Jan. 73	622A	0.21	0.10

The January 26 orbit occurred shortly after the SCMR scanner motor was turned off. The results support the conjecture that the scanning mirror of the SCMR instrument introduced a torque which caused the major part of the earlier roll bias.

Subsections 1.2 through 1.7 of this catalog summarize the operational highlights of the individual experiments and call attention to known data anomalies. Section 2 lists the on-off times for each experiment. Sections 3 and 4 show ESMR and THIR imagery, while Section 5 presents corrections to The Nimbus 5 User's Guide.

The user is referred to The Nimbus 5 User's Guide for a complete description of each experiment and to Section 1.7 of that Guide for the requesting procedure and sources for all data. Sections 2, 3, and 4 of this Data Catalog should help the user to select data to meet his needs.

1.2 The Temperature Humidity Infrared Radiometer (THIR) Subsystem

The quality of the THIR data from both channels ($11.5\mu\text{m}$ and $6.7\mu\text{m}$) has been excellent. Figure 1-2 is an example of THIR pictorial data. Root mean square (rms) THIR temperature variations, due to flutter in the HDRSS tape recorders and to normal noise components, appear to less than 2°K .

All processed THIR film is archived and available through the National Space Science Data Center, as is all available THIR digital data. The THIR digital products are processed to final format only on request. Sections 1.7 and 2.4 of The Nimbus 5 User's Guide discuss the formats and procedure to order these products.

1.3 The Surface Composition Mapping Radiometer (SCMR) Experiment

The SCMR experiment collected and returned approximately 35 hours of instrument data during the first 320 orbits. Intermittent loss of a scan mirror synchronization pulse caused a loss of useful data output whenever this occurred. This synchronization problem progressed to the point where no useable data could be obtained after orbit 320 (4 January 1973).

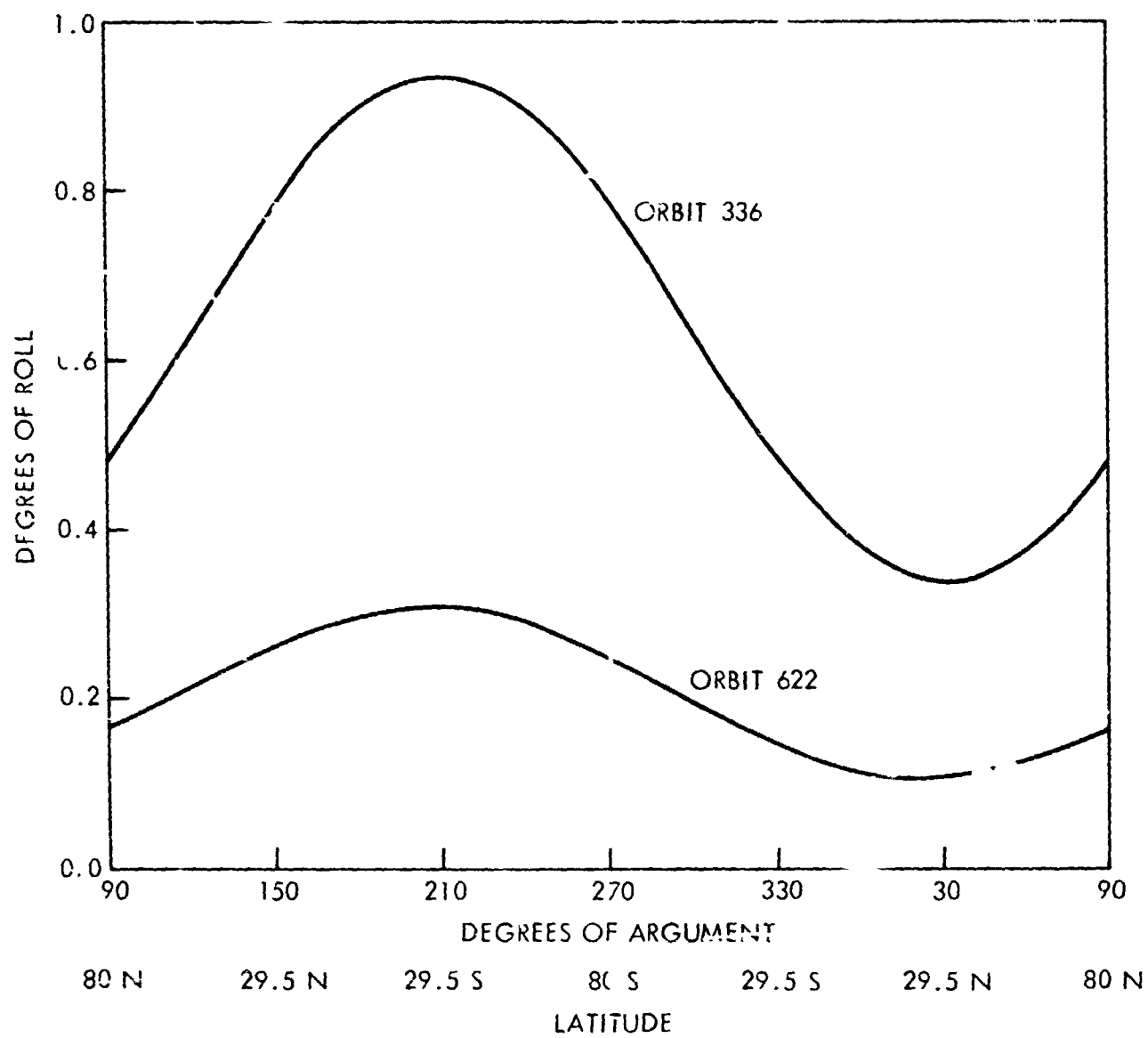


Figure 1-1. Nimbus 5 Roll Bias Curves Derived from THIR Visicorder Data.



ESMR 1.55 cm
190°K to 259°K
Brightness Temp.
Display



THIR 11.5 μm



THIR 6.7 μm

20 DECEMBER 1972

The Nimbus 5 Electrically Scanning Microwave Radiometer (ESMR) and the Temperature Humidity Infrared Radiometer (THIR) can be used in parallel to observe and analyze atmospheric and terrestrial phenomena. The ESMR brightness temperature display indicates areas of rainfall occurring in a cyclone (2), 3900 kilometers south of Saudi Arabia (1), while the 11.5μm THIR data provides cloud top and surface temperatures and the 6.7μm THIR data provides the moisture content of the upper troposphere and stratosphere over the same area.

Figure 1-2. A Comparison of Nimbus 5 THIR and ESMR Pictorial Data.



Figure 1-3. Nimbus 5 SCMR Nighttime Infrared ($10.7\ \mu\text{m}$ Channel) Image Recorded over Florida and Cuba on 24 December 1972.

Figure 1-3 is an example of the $10.7\mu\text{m}$ data recorded over Florida and Cuba when the instrument was operating in a near-normal mode. Many fine-scale thermal features are evident. The principal investigator for this experiment, Dr. W. Hovis, is currently analyzing the available data.

Users who desire ESMR data or information should write to Dr. Warren G. Hovis, Code 652, Goddard Space Flight Center, Greenbelt, Maryland 20771.

1.4 The Electrically Scanning Microwave Radiometer (ESMR) Experiment

The ESMR instrument operated very well during its first two months in orbit. In the last 100 orbits of this reporting period there were several data dropouts for durations of 16 to 64 seconds. All systems returned to normal after each dropout. Figures 1-2 and 1-4 are examples of the ESMR photographic products.

One pictorial display is generated from the output of each orbit (see Section 3). Digital Nimbus Meteorological Radiation ESMR tapes are being produced by the Laboratory for Meteorology and Earth Sciences for archiving at the NSSDC. User output formats for these tapes were published in The Nimbus 5 User's Guide. Brightness temperature accuracies appear to be about $\pm 2^\circ$ to 5° K.

Table 4-4 of The Nimbus 5 User's Guide, "ESMR Antenna Loss Ratio-Flight Model," will not be supplied. The antenna properties changed after final calibration and rendered these numbers useless. A set of empirical calibration numbers is being developed which will correct for the effects of antenna loss and side lobes, and the effect of different viewing angles. This will be published in a later catalog.

1.5 The Infrared Temperature Profile Radiometer (ITPR) Experiment*

During orbit 3 the ITPR was turned on and commanded to the scan mode. Within the remaining portion of orbit 3 the instrument became thermally stable except for the scan motor temperature, which continued to increase until orbit 53. The scan drive assembly operated perfectly until orbit 50, when scan errors were detected. Due to the erratic behavior of the scan mechanism, the instrument was commanded to nadir position during orbit 53 and remained in this mode through orbit 326. For the remaining portion of the report period, several modes of operation were used, during which the scan drive assembly operated with a reduced duty cycle. The modes of operation are summarized in Table 1-3.

With the exception of the scan mechanism, the ITPR performance has been excellent. The thermal stability has been good, with the thermally controlled portions of the instrument maintained within the specified temperature range. The stability of

*Contributed by H. Howell of NESS/NOAA

the detector and chopper reference blackbody temperatures for the entire report period insure the validity of the new calibration constants given in Table 5-3, Section 5, of this Catalog.

The instrument response during the fixed space view indicates that the ITPR field of view in that portion is slightly obscured. The problem is alleviated by using the position adjacent to the space position (toward nadir) as the actual space view, i.e., the instrument response from this view indicates a lower scene temperature. The magnitude of error in the space view is approximately two percent and appears to be diminishing with time.

The data quality is excellent and there is no apparent degradation with time. Data archival for the report period will include most orbits from 12 through 693 with the exception of the following orbits: 123-146, 201-208, 310-314, 357-370.

Table 1 -3

ITPR SCAN MODES

DATES	ORBITS	OPERATION
11 Dec-15 Dec	4A*-53R**	Normal 3-grid scan.
15 Dec- 4 Jan	53R-327A	Scan off, viewing nadir only.
4 Jan- 5 Jan	327A-340R	Alternately scanning grid 1 and viewing nadir.
5 Jan-10 Jan	340A-406A	Scanning all grids from 30°S to 30°N, viewing nadir for the remaining part of each orbit.
10 Jan-11 Jan	406A-424A	Scanning all grids from 60°S to 20°S and 20°N to 60°N, viewing nadir at other times.
11 Jan-24-Jan	424A-596A	Scan off, viewing nadir only (due to scan problems detected in orbit 424).
24 Jan-27 Jan	596A-638A	Alternately scanning grid 1 and viewing nadir.
27 Jan-31 Jan	638A-693	Scan off, viewing nadir only,

*A = Fairbanks, Alaska

**R = Rosman, North Carolina



Figure 1-4. Nimbus 5 ESMR Montage Prepared from Swath 2 Data (190° to 250° K) Recorded on 11 January 1973 (Orbits 413 to 425).

1.6 The Selective Chopper Radiometer (SCR) Experiment

The SCR performance has been satisfactory through the end of this catalog period. Stray radiation levels and subsystem noise have remained reasonably constant since launch. Housekeeping telemetry values have remained at their prelaunch levels and subsystem average orbital temperatures agree favorably with the predicted values.

Gains on channel B, C, and D, calculated from inflight calibrations, have remained unchanged since sensor thermal equilibrium was achieved. The A group gains increased up to orbit 130, because of slight CO₂ outgassing, but have remained almost unchanged since then. Analysis has shown that the gains are very stable throughout an orbit and that the three inflight calibration cycles each orbit are sufficient gain checks.

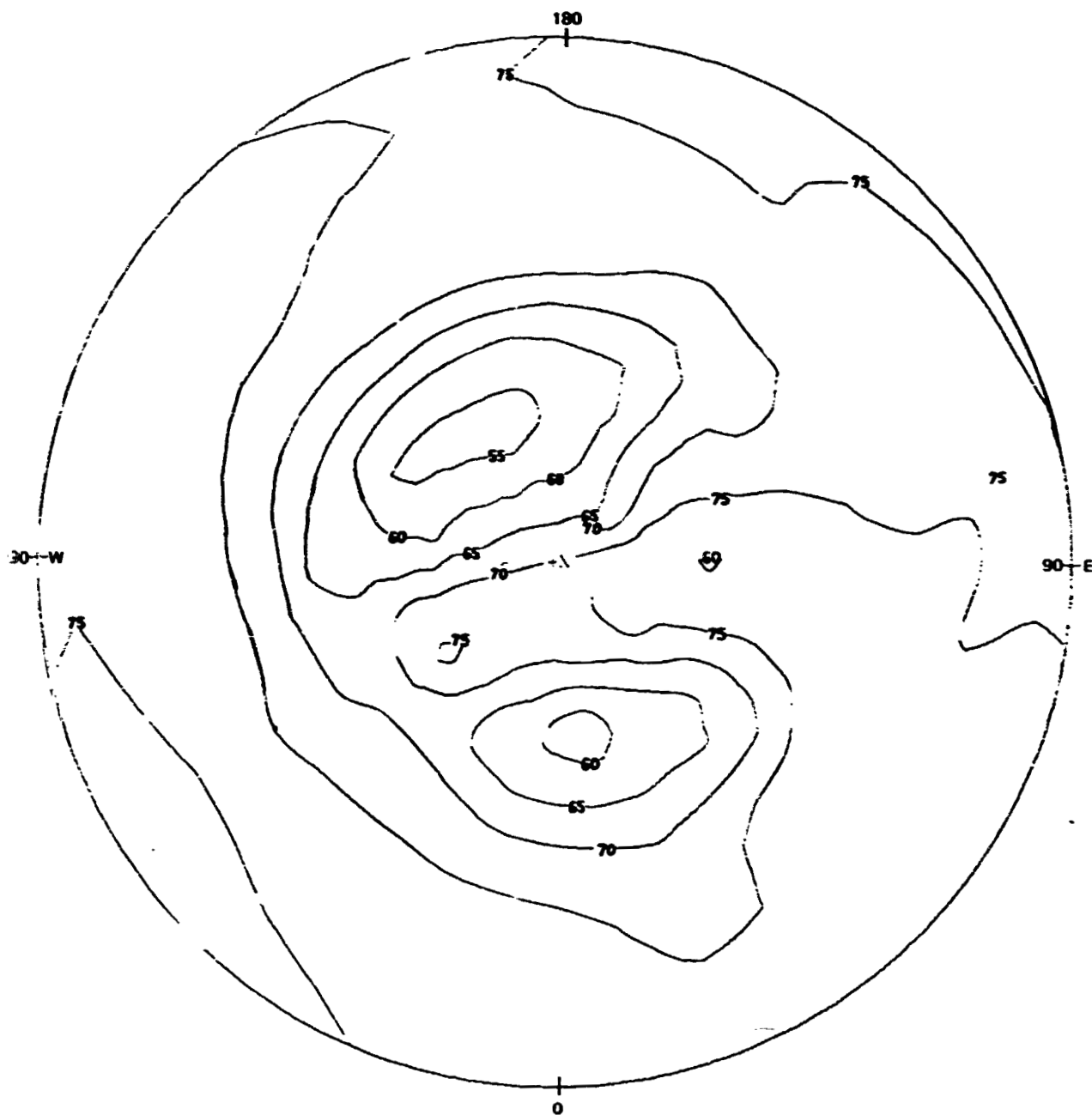
Between South America and Africa, in the region of the South Atlantic Anomaly, the high radiation flux affects the data from channels B and C. The greatest effect is seen on the C1 and C2 channels; a lesser effect on the B group. The interference appears as spikes on the data, most of which can be removed in the data processing.

Reflected sunlight and earth albedo degrade the data from channels D1, D2, and D3 during calibration sequences while the instrument is in high gain. However, during normal gain the effect is negligible.

About every 400 revolutions, moonlight enters the space-reference point on each orbit for about two days, causing a negative shift of the D3 channel high gain data, including the inflight calibrations, throughout each orbit. This phenomenon first occurred about orbit 200. Moonlight, sunlight, and earth albedo have no apparent effect on the D group channels while in normal gain.

The SCR data is transmitted daily from GSFC to Oxford, England, where routine processing is carried out. Contoured charts of radiance (in ergs) for the difference B channels and A channels are prepared from each 24 hours of data.

During this catalog period, a series of stratospheric warmings occurred in the northern hemisphere. Figures 1-5, 1-6, and 1-7 illustrate the development of such warming during a period of maximum activity. On January 17 the radiance field at the level of the channel B1, B2 (about 1.6 mb or 45 km) was dominated by a wave number 2 pattern near the Pole (Figure 1-5). On January 24 the two cold regions had shifted to the east and were located over northern Canada and Mongolia and a tongue of warm air extended over Europe to northern Siberia (Figure 1-6). The disturbance subsequently increased in amplitude until the maximum zonal variation occurred on January 28th. During this period the two cold areas combined and the region of maximum heating moved to a position over northwestern Russia (Figure 1-7). This single wave number 1 pattern subsequently reverted to shorter wavelengths as the warming dissipated.



Figur. 1-5. Northern Hemisphere Radiance Field (in Ergs) for 17 January 1973
Derived from SCR Channel B1B2 Data (about 1.6 mb or 45 km).

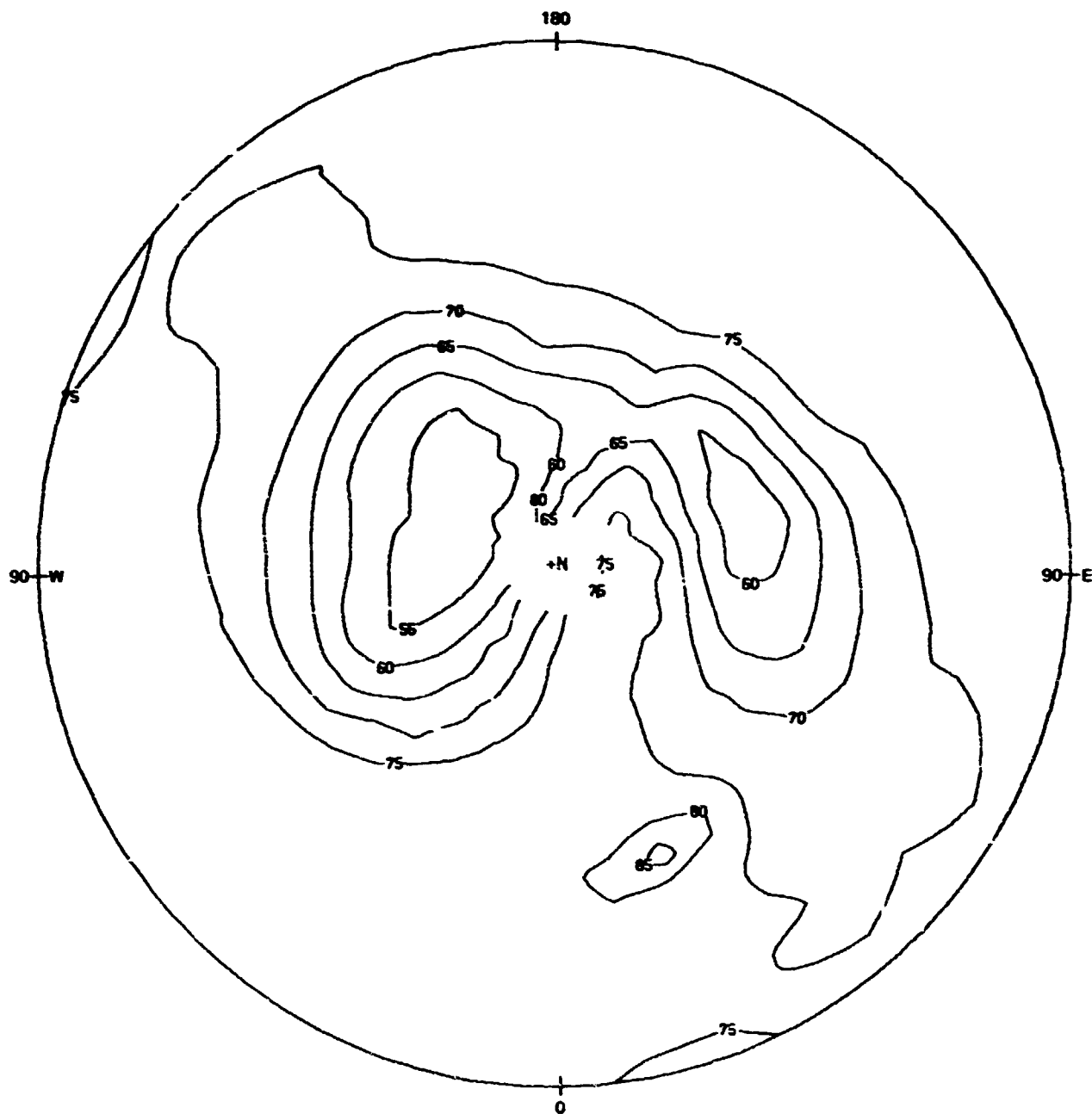


Figure 1-6. Northern Hemisphere Radiance Field (in Ergs) for 24 January 1973
Derived from SCR Channel B1B2 Data (about 1.6 mb or 45 km).

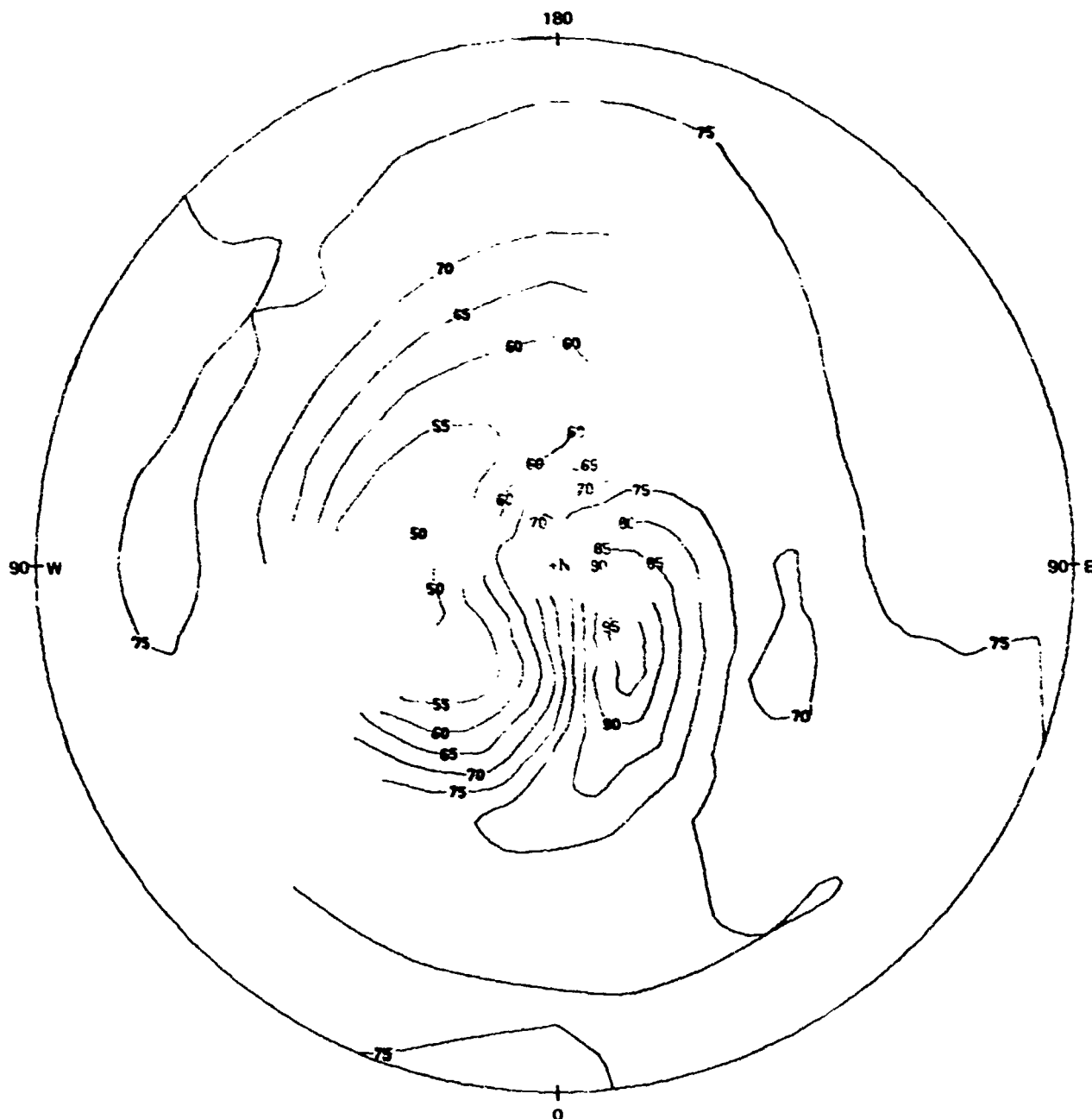


Figure 1-7. Northern Hemisphere Radiance Field (in Ergs) for 28 January 1973
Derived from SCR Channel B1B2 Data (about 1.6 or 45 km).

Similar activity was observed on the lower channels, with the wave pattern shifting eastward on each successive level downward in the atmosphere. The greatest change, corresponding to an increase of 10°K in one day, was observed on channel B2 and B3 between January 27 and 28.

1.7 The Nimbus E Microwave Spectrometer (NEMS) Experiment*

The NEMS experiment is the first step in the application of the microwave spectrum to global sensing of atmospheric temperature structure. The instrument yields unique information about the atmospheric humidity and cloud water content over the oceans, and some parameters of snow cover, ice type, soil moisture, sea state, etc. The instrument views nadir continuously with a spatial resolution of approximately 170 km, and measures the thermal radiation at 22.235, 31.4, 53.65, 54.9, and 58.8 GHz with a sensitivity of about 0.1° to 0.2°K for a 16-second integration period.

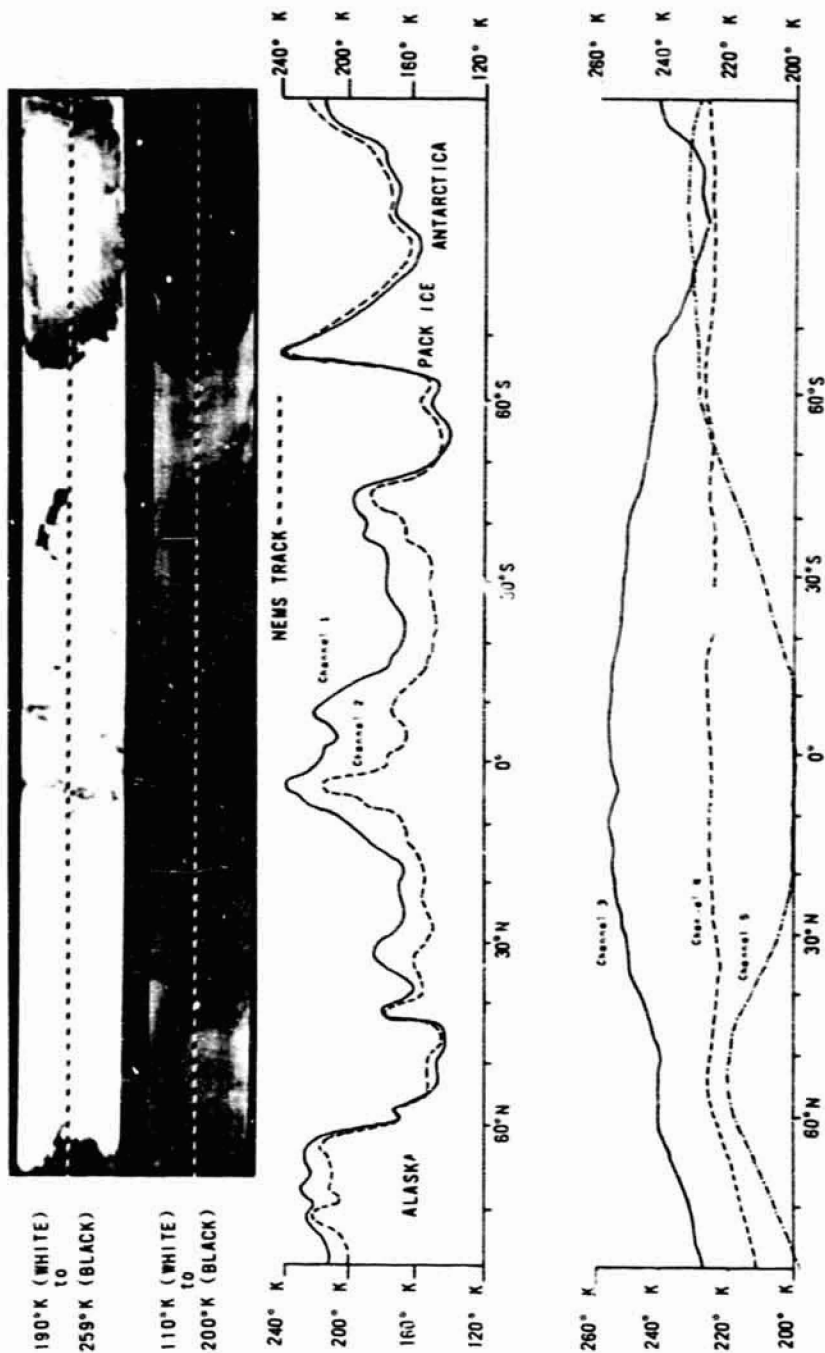
Since launch, 11 December 1972, the instrument has operated continuously without difficulty or degradation.

In Figures 1-8, 1-9, and 1-10 are plotted antenna temperatures (radiances) for several orbits. Channels 1 through 5 are numbered in order of increasing frequency. The data shown in Figure 1-8, illustrates several phenomena. For example, the Arctic and Antarctic are evident as high temperature regions in channels 1 and 2. Two unexpected phenomena are evident in these polar regions, (1) the center of the Antarctic radiates remarkably little microwave energy in channels 1 and 2 (the antenna temperatures are approximately 160°K, far colder than anything observed in the Arctic), and (2) the spectral properties of the ice and snow in the Arctic and Antarctic are different. In the north, channel 2 readings are everywhere colder than channel 1, whereas in the Antarctic, the channel positions are reversed. These spectral properties, which vary from place to place should provide new information about the distribution of various types of ice.

Also evident, in the center of the scan in Figure 1-8, are the humid tropical regions over the Pacific Ocean. The integrated water vapor density is approximately proportional, over ocean, to the spread between channels 1 and 2. The liquid water content is approximately proportional to the displacement of channel 2 values from ocean values in the ice-free area of the Arctic. The intertropical convergence zone (ITCZ), marked by strong rain bands and high humidity, is evident in channels 1 and 2 near the equator.

The temperature sounding experiment, involving channels 3, 4, and 5, is also quite successful. Weighting functions for channel 3, 4, and 5 peak near 4, 11, and 18

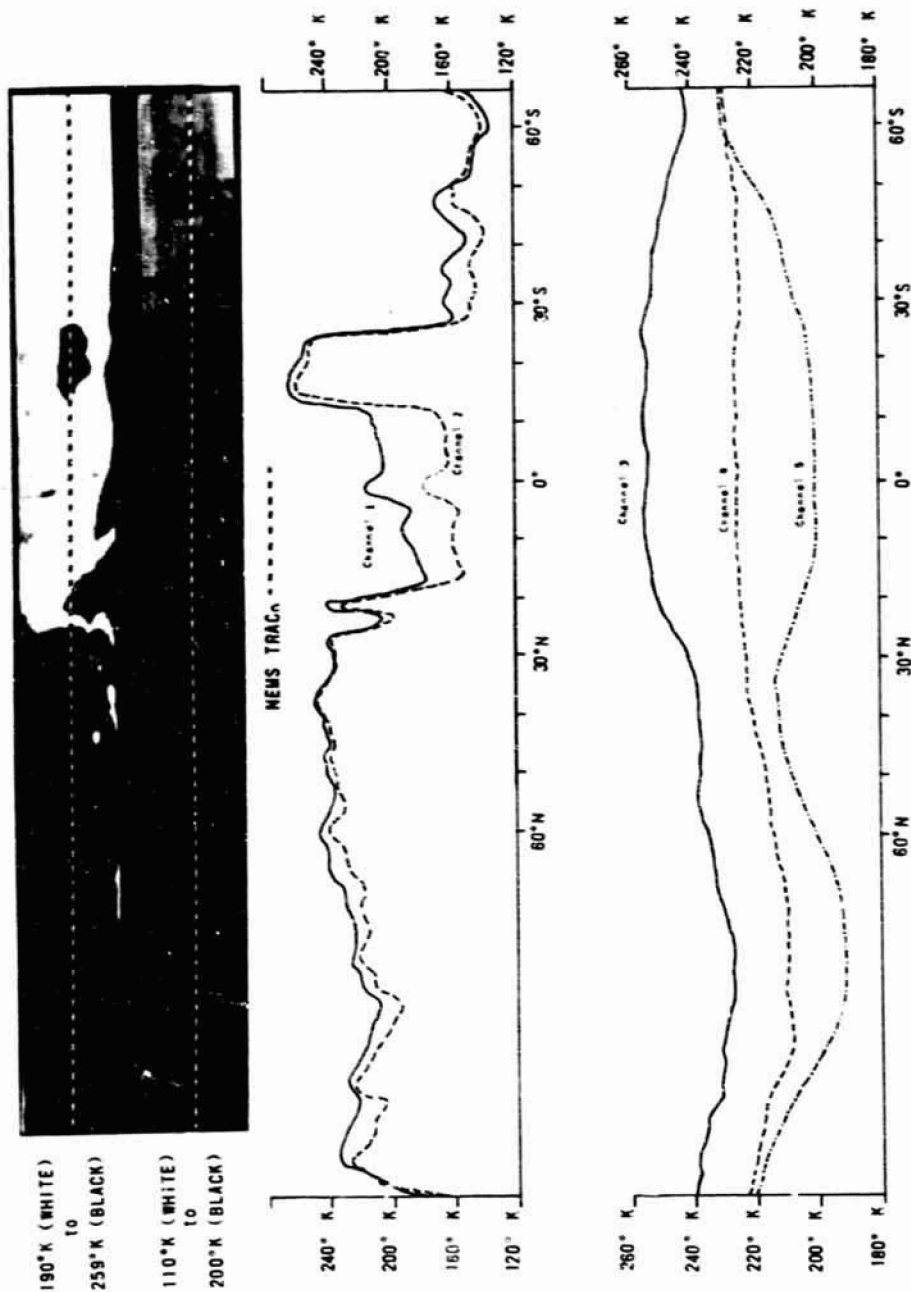
*Contributed by Dr. David H. Staelin, MIT, Cambridge, Mass.



Displayed is brightness temperature data for 23 December 1972 from the two Nimbus 5 microwave experiments. Both detect atmospheric water vapor and rainfall areas over oceans. In the Electrically Scanning Microwave Radiometer (ESMR) images, rainfall areas over oceans appear quite dark, while the areas of atmospheric water vapor have intermediate shades of gray. Channel 1 of the Nimbus E Microwave Spectrometer (NEMS) is used to estimate the water vapor density over oceans; channel 2 is used to estimate the atmospheric liquid water content over oceans. NEMS channels 3, 4, and 5 are used for temperature sounding, and peak near 4, 11, and 18 km altitudes, respectively. Note that clouds have almost no perturbing effect on the atmospheric temperature values sensed by these three channels. In these channels temperatures vary smoothly along the orbit. As an example, the frontal system near 40 degrees north is seen on channels 1 and 2 to contain considerable liquid water, but introduces no observable change in channel 3.

The sensor coverage extends from Alaska, southward past New Zealand, and across Antarctica. Pack ice near Antarctica appears black on the top ESMR image and as temperatures near 240 degrees Kelvin on channels 1 and 2 of the NEMS.

Figure 1-8. NEMS Brightness Temperature Profiles and Corresponding ESMR Images Recorded on 23 December 1972.



Displayed is brightness temperature data for 26 December 1972 from the two Nimbus 5 microwave experiments. Both detect atmospheric water vapor and rainfall areas over oceans. In the Electrically Scanning Microwave Radiometer (ESMR) images, rainfall areas over oceans appear quite dark while the areas of atmospheric water vapor have intermediate shades of gray. Channel 1 of the Nimbus 5 Microwave Spectrometer (NEMS) is used to estimate the water vapor density over oceans; channel 2 is used to estimate the atmospheric liquid water content over oceans. NEMS channels 3, 4, and 5 are used for temperature sounding, and peak near 4, 11, and 18 km altitudes, respectively. Note that clouds have almost no perturbing effect on the atmospheric temperature values sensed by these three channels. In these channels, temperatures vary smoothly along the orbit.

After passing over Asia, the sensor observed the Indian Ocean almost parallel to the African coast. Particularly interesting are the readings of NEMS channels 1 and 2 as the spacecraft passes over land

Figure 1-9. NEMS Brightness Temperature Profiles and Corresponding ESMR Image Recorded on 26 December 1972.

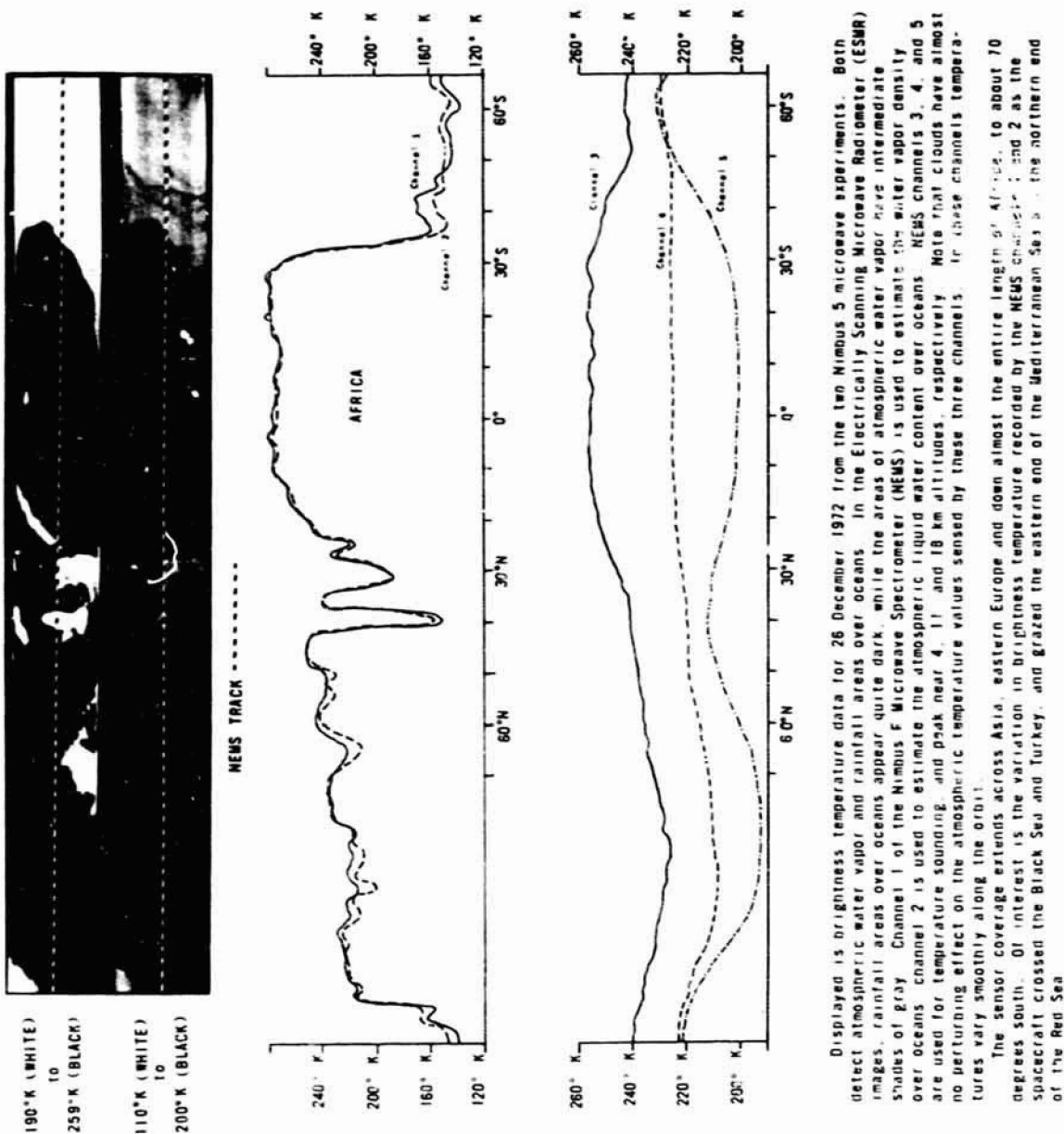


Figure 1-10. NEMS Brightness Temperature Profiles and Corresponding ESMR Images Recorded on 26 December 1972.

km altitudes, respectively. A major concern has been whether the microwave temperature soundings would be perturbed by clouds, but the only such perturbations that are evident are the small deflections of channel 3 which occur over the center of the ITCZ. These deflections of channel 3 are on the order of 0° to 4°K, and are of short duration. No evidence now exists of such perturbations outside the tropics. The brightness temperatures of channels 3, 4, and 5 vary quite smoothly from point to point; most major variations have scale sizes of a few thousand kilometers.

In Figure 1-11 are plotted layer thicknesses inferred from channels 3, 4, and 5 for orbit 166. The 1000-500 mb thickness curve is compared with one generated by the National Weather Service for 1200 GMT, approximately four hours earlier. The difference is never more than 3°K, despite the time difference and the fact that the NEMS results are preliminary. It is very interesting to observe that the microwave data shows the 1000-500 mb and 250-50 mb portions of the atmosphere, between 20°N and 10°S, to be the same within about 1°K peak-to-peak, implying great accuracy for the NEMS measurements of temperature gradients. This accuracy may be sufficient to observe the tropical meteorological dynamics.

In Figure 1-12 are plotted three NEMS-inferred temperature profiles, together with the corresponding 1200 GMT NOAA grid interpolation. These results are quite reasonable, particularly since the calibration constants have not yet been fully revised by comparison of NEMS brightness temperatures with those calculated for coincident meteorological measurements.

Computer program development is proceeding well. Version 1 of α , β , and γ are fully written, and are almost operational. The α program is for instrument diagnosis and calibration; β is for data interpretation and produces the NEMS Output Tape (NEMSOT) for data archival at NSSDC, and γ is for data interpretation. After γ is operational and more data is available, work on evaluating the NEMS accuracy and meteorological significance should make significant progress. The format for NEMSOT (page 156, The Nimbus 5 User's Guide) is nearing final form and will be available in a later Data Catalog.

Co-investigation for NEMS includes F. T. Barath, A. H. Barrett, N. E. Gaut, W. B. Lenoir, W. Nordberg, P. W. Rosenkranz, and J. W. Waters.

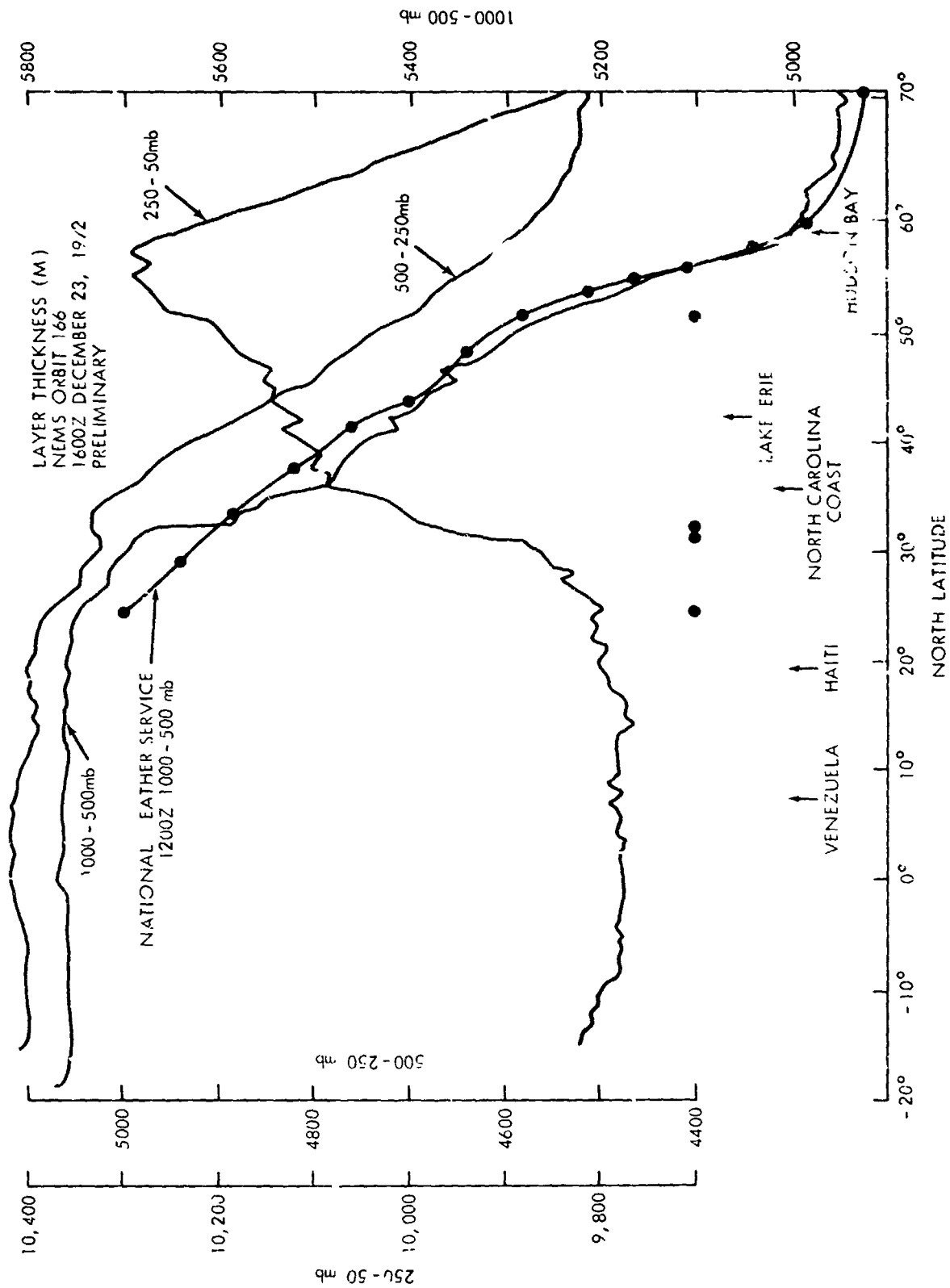


Figure 1-11. Three NEMS Derived Layer Thicknesses and a Comparable National Weather Service 1000-500 mb Layer Thickness.

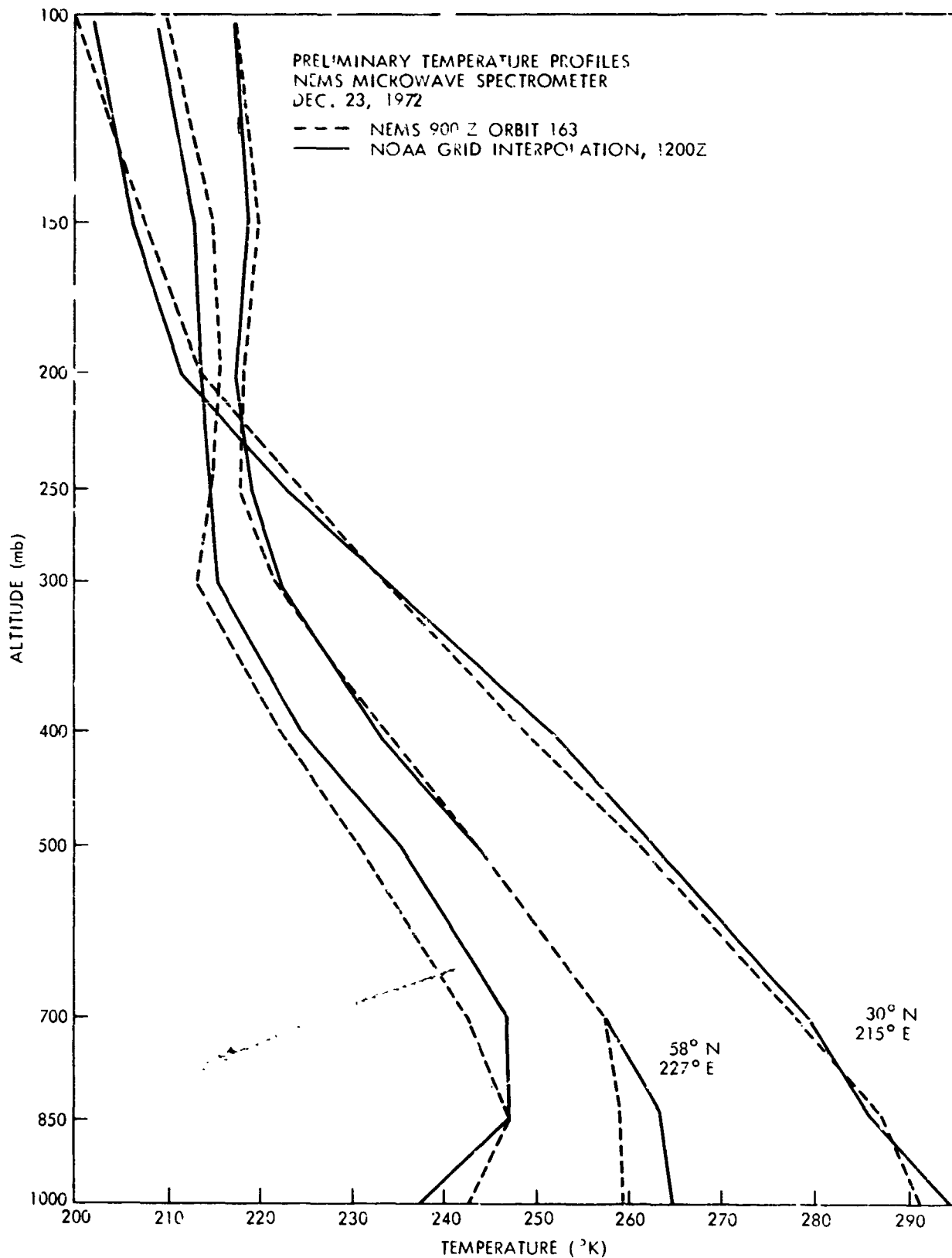


Figure 1-12. Comparison of NEMS Derived Temperature Profiles with NOAA Grid Interpolations.

SECTION 2

THE ORBITAL ELEMENTS AND DATA AVAILABILITY ON-OFF TIMES

The Nimbus 5 Brouwer Mean orbital elements for December 1972 and January 1973 are listed in Table 2-1.

The data availability on-off times (Table 2-2) list the times when the data from each instrument was recorded on a HDRSS.

THIR orbital coverage in Table 2-2 is divided between daytime and nighttime data. The THIR data is normally recorded simultaneously from both $6.7\mu\text{m}$ and $11.5\mu\text{m}$ channels. Therefore, the listed on-off times apply to both channels. In the few cases where the $6.7\mu\text{m}$ channel has times different from the $11.5\mu\text{m}$ channel, the time corrections are indicated by asterisks.

A THIR data orbit is defined as beginning and ending at the night-day terminator. Thus, the daytime data orbit extends from the night-day terminator to the day-night terminator. Each daytime THIR data orbit is assigned the orbit number of the ascending node which occurs during that portion of the orbit. The same orbit number is assigned also to the succeeding nighttime data orbit.

The "INT ORBIT & STDN" identify the orbit in which the satellite is interrogated and the ground station to which the satellite data is transmitted. The letter "R" denotes Rosman, North Carolina; the letter "A" denotes Fairbanks, Alaska.

The "HDRSS" identifies the satellite tape recorder, either A or B.

The "THIR GRID CORR" columns are used to indicate an image grid error in latitude and longitude whenever either is in error by more than one degree of great circle arc (60 n. m.). Latitude errors are suffixed by an N or S; longitude errors, by an E or W. An N or S indicates the grid should be moved up or down by the amount shown to obtain a good fit of the grid to the geography. An E or W indicates the grid should be moved right or left, at the equator, by the amount shown.

Ascending node times and longitudes are the times and longitudes at which the satellite crosses the equator in the northbound direction. These crossings always occur during the daytime portion of the orbit. The descending nodes and times refer to the southbound crossings, which occur during the nighttime portion of the orbit.

ESMR, NEMS, SCR, and ITPR are normally on all the time. Their sensory information is recorded on a HDRSS between interrogations, and their on-and-off times define the total record times between interrogations. An interrogation orbit is the orbit during which previously recorded data is transmitted to a ground station. This data will be from segments of two or more data orbits as defined above.

for THIR. To determine the orbital coverage of the data from any interrogation, the on-and-off times should be matched with the appropriate ascending or descending node listed with the THIR information on the same page of Table 2-2. Coverage can then be determined as described below.

The "DATA ORBIT" indicator in the ESMR table is given only for reference purposes. It is the number which appears on the data display image, samples of which are reproduced in Section 3, and identifies the last data orbit on each display. It should not be confused with the THIR data orbit number.

Table 2-2 together with the World Map (Figure 2-1) and the vellum Subsateilite Tracks Overlay attached to the back of this catalog, can be used to determine approximate geographic coverages.

A Subsateilite Tracks Overlay is correctly oriented with the World Map when the ascending or descending node line on the overlay coincides with the 0-degree latitude (equator) line of the World Map. Orbital coverage is determined by placing an orbit track on the world map at the appropriate ascending node (for daytime) or descending node (for nighttime) longitude for the orbit of interest.

The Subsateilite Tracks Overlay contains 14 correctly spaced tracks, which end at the approximate earth day-night transitions. The tracks contain time ticks spaced 5 minutes apart, appropriately annotated at the edge of the overlay, referenced from the equator. Times in minutes from equator crossings for all or part of a particular orbit are calculated by adding to or subtracting from the ascending or descending node time listed for that orbit in the Data Availability On-Off Times Table.

The nature and format of the data to be available from each experiment are explained in detail in the respective sections of The Nimbus 5 User's Guide. The appropriate sources for requesting the various data types are listed in Section 1.7 of the same manual.

Table 2-1

**NIMBUS 5 BROUWER MEAN ORBITAL ELEMENTS FOR
DECEMBER 1972 AND JANUARY 1973**

Epoch	Universal Time	21 Dec 1972 00 00 00	10 Jan 1973 00 00 00	22 Jan 1973 00 00 00
Validity Period	Universal Time	FR 16 Dec 1972 00 00 00 TO 31 Dec 1972 23 50 00	FR 1 Jan 1973 00 00 00 TO 15 Jan 1973 23 50 00	FR 16 Jan 1973 00 00 00 TO 31 Jan 1973 23 50 00
Semi-Major Axis	Km	7473.5985	7473.5940	7473.5909
Eccentricity		.0008128	.0008575	.0008868
Inclination	Degrees	99.950	99.950	99.950
Argument of Perigee	Degrees	211.634	162.615	133.971
Right Ascension of Ascending Node	Degrees	262.149	231.970	293.708
Mean Anomaly	Degrees	224.676	81.353	138.611
Height of Perigee	Km	1089.36	1089.02	1088.80
Height of Apogee	Km	1101.56	1101.84	1102.02
Anomalistic Period	Minutes	107.1648	107.1647	107.1646
Motion of Perigee	Deg. per day	2.4331	2.4334	2.4334

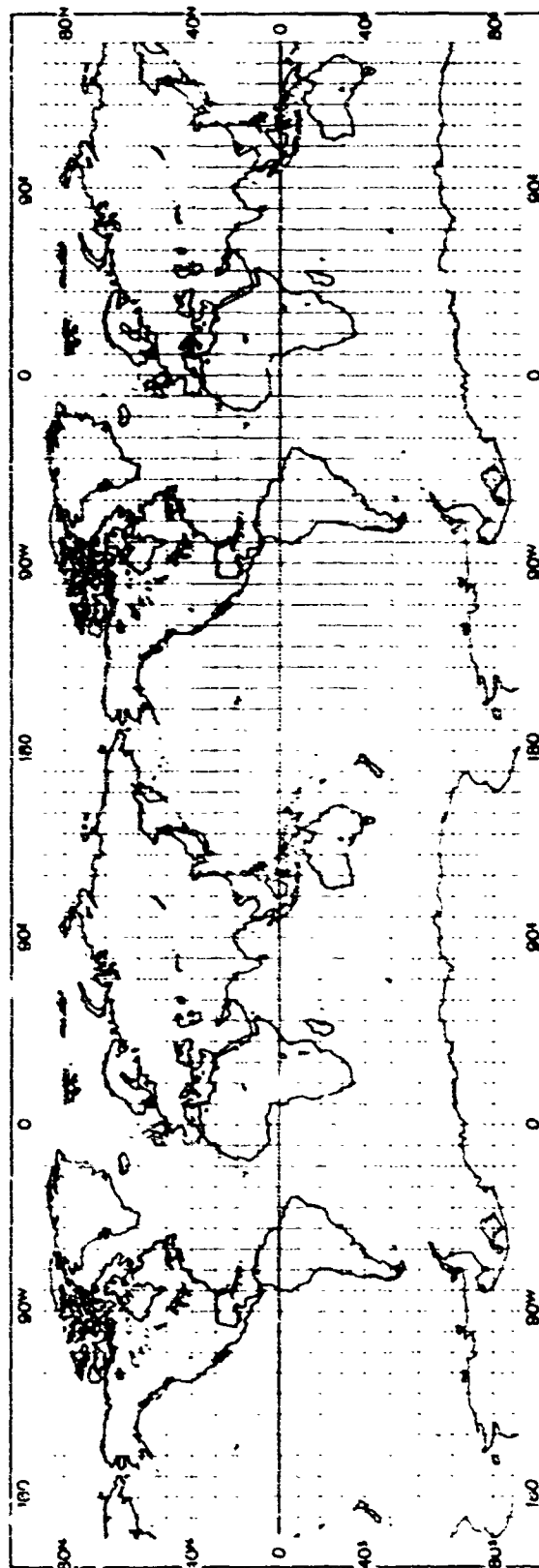


Figure 2-1. World Map

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
19 DECEMBER 1972**

THIR										ESNR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND	DESC. MODE		DATA		ON	OFF	INT	H	DESC. MODE		DATA	
ORBIT	HRMN	HRMN	STON	ORBIT	D	GRID	TIME	LONG	DEC	ORBIT	HRMN	HRMN	STON	ORBIT	D	TIME	LONG	ORBIT	HRMN
					R	CORR									R				
					S	LALO	HRMNSS								S				
DAYTIME THIR										ASC. NODE									
104							010800	E155.5		106	0326	0411	106R	B					
105							025522	E128.7		107	0526	0646	107R	B					
106	0411	0459	106R	B			044239	E101.4		108	0710	0849	108A	A					
107	0558	0646	107R	B	10W		062955	E075.1		109	0852	1037	109A	B					
108	0745	0834	108A	A			081712	E048.2		110	1030	1222	110A	A					
109	0932	1021	109A	B			100429	E021.4		111	1224	1406	111A	B					
110	1120	1208	110A	A			115145	W005.4		112	1408	1549	112A	A					
111	1307	1355	111A	B			133902	W032.2		113	1552	1735	113A	B					
112	1454	1543	112A	A			152610	W059.0		114	1736	1910	114A	A					
113	1641	1730	113A	B			171335	W085.9		115	1921	2107	115A	B					
114	1829	1917	114A	B			190051	W112.7		116	2147	2253	116A	A					
115	2016	2105	115A	A			204808	W139.5											
116	2203	2252	116A	A			223525	W164.3											
NIGHTTIME THIR										DESC. NODE									
104							020142	W037.9		106	0459	0519	106R	B					
105	0326	0411	106R	B			034858	W064.9		107	0646	0708	107R	B	10W				
106	0459	0519	106R	B			053615	W091.5		108	0707	0745	108A	A					
107	0524	0558	107R	B	10W		072331	W110.4		109	0834	0840	109A	B					
108	0646	0708	107R	B	10W		091040	W145.2		110	0847	0932	109A	B					
109	0707	0745	108A	A			105805	W172.8		111	1021	1036	109A	B					
110	0834	0840	108A	A			124521	E161.2		112	1034	1120	110A	A					
111	0847	0932	109A	B			143230	E134.4		113	1200	1221	110A	A					
112	0910	0932	109A	B			151254	E107.6		114	1220	1307	111A	B					
113	0932	1021	109A	B			180711	E000.0		115	1355	1405	111A	B					
114	1021	1036	109A	B			195427	E053.9		116	1405	1454	112A	A					
115	1034	1120	110A	A			214144	E027.1			1550	1641*	113A	B					
116	1200	1221	110A	A			232901	E000.3			1735	1829	114A	B					
	1220	1307	111A	B							1910	2016	115A	B					
	1355	1405	111A	B							2107	2203	116A	B					
	1405	1454	112A	A															
	1550	1641*	113A	B															
	1735	1829	114A	B															
	1910	2016	115A	B															
	2107	2203	116A	B															

*6.7 CHANNEL ON-OFF DIFFERENCE

112 1543 1641 113A B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
20 DECEMBER 1972

THIR							ESMR					
DATA ORBIT	11.5 + 6.7		INT ORBIT +	H D	THIR GRID CORR	ASC. AND DESC. NODE TIME LONG	DATA ORBIT	ON OFF		INT ORBIT +	H D	
	HRMM	HRMM	STDN	R S	LALO	HRMNSS DEG		HRMM	HRMM	STDN	R S	
DAYTIME THIR							ASC. NODE					
117						002241 E166.9	118	0043	0242	119R	B	
118	0138	0226	119R	B		020958 E148.0	119	0242	0437	119R	A	
119	0325	0414	119R	A		035714 E113.2	120	0442	0625	120R	A	
120	0512	0601	120R	A		054431 E086.4	121	0626	0805	121A	B	
121	0700	0748	121A	B		073145 E059.6	122	0811	0951	122A	A	
122	0847	0935	122A	A		091904 E032.8	123	0953	1139	123A	B	
122	0935	0958	122A	A			124	1139	1322	124A	A	
123	1034	1123	123A	B		110621 E006.0	125	1324	1508	125A	B	
124	1222	1318	124A	A		125337 W020.9	126	1508	1650	126A	A	
125	1409	1457	125A	B		144954 W047.7	127	1652	1832	127A	B	
126	1556	1645	126A	A		162618 W074.5	128	1837	2021	128A	A	
127	1743	1832	127A	B		181527 W101.3	129	2022	2209	129A	B	
128	1931	2028	128A	A		200244 W128.2	130	2209	0008	136A	A	
129	2118	2206	129A	B		215000 W155.8						
130	2305	2354	136A	A		233717 E178.2						
NIGHTTIME THIR							DESC. NODE					
117	0043	0138	119R	A		011617 W026.5	NEMS - SCR - ITPR					
118	0226	0242	119R	B		030334 W053.4	0043	0242	119R	A		
118	0242	0325	119R	A			0242	0438	119R	B		
119	0414	0436	119R	A		045058 W080.2	0442	0624	120R	A		
119	0442	0512	120R	A			0624	0805	121A	B		
120	0601	0624	120R	A		063807 W107.0	0811	0951	122A	A		
120	0624	0700	121A	B			0949	1139	123A	B**		
121	0748	0804	121A	B		082524 W133.8	1135	1322	124A	A**		
121	0810	0847	122A	A			1322	1508	125A	B**		
122	0949	1034	123A	B		101240 W160.6	1509	1650	126A	A**		
123	1123	1138	123A	B		115957 E172.5	1650	1833	127A	B**		
123	1143	1222	124A	A			1833	2021	128A	A**		
124	1310	1321	124A	A		134713 E145.7	2021	2209	129A	B**		
124	1322	1409	125A	B			2209	0009	136A	A**		
125	1457	1506	125A	B		153430 E118.9	**ITPR DATA IS NOT AVAILABLE FOR THESE ORBITS.					
125	1508	1556	126A	B								
126	1650	1743	127A	B		172146 E092.1						
127	1833	1931	128A	A		190903 E065.3						
128	2020	2118	129A	B		205620 E038.4						
129	2209	2305	136A	A		224336 E011.6						
130	2354	0006	136A	A		003053 W015.2						

**ITPR DATA IS NOT AVAILABLE FOR THESE ORBITS.

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
21 DECEMBER 1972**

THIR										ESMR									
-----										-----									
DATA	11.5 + 6.7		INT	H	THIR	ASC. AND	DESC. MODE			DATA	ON OFF		INT	H	THIR	ASC. AND	DESC. MODE		
ORBIT	HRMN	HRMN	ORBIT	R	CRID	TIME	LONG			ORBIT	HRMN	HRMN	ORBIT	R	CRID	TIME	LONG		
			STDM	S	LALO	HRMNSS	DEC						STDM	S	LALO	HRMNSS	DEC		
DAYTIME THIR										ASC. MODE									
131						012433	E151.4			132	0156	0352	132R	B					
132	0240	0328	132R	B	2E	031159	E124.6			133	0400	0600	134A	B					
133	0427	0516	134A	B		045907	E097.3			135	0724	0906	135A	B					
134						064623	E070.9			136	0911	1051	136A	B					
135	0802	0850	135A	B	2N	083348	E044.1			137	1059	1238	137A	A					
136	0949	1037	136A	B		102056	E017.3			138	1240	1420	138A	B					
137	1136	1225	137A	A		120813	W009.5			139	1424	1605	139A	A					
138	1323	1412	138A	B		136529	W036.3			140	1608	1750	140A	B					
139	1511	1559	139A	A		154246	W063.2			141	1752	1935	141A	A					
140	1658	1746	140A	B	2N	173803	W090.8			142	1937	2119	142A	B					
141	1845	1934	141A	A		191719	W116.8			143	2124	2309	143A	A					
142	2032	2120	142A	B		210436	W143.6												
143	2220	2300	143A	A		225152	W170.4												
NIGHTTIME THIR										DESC. MODE									
131	0156	0240	132R	B	2W	021809	W042.0												
132	0328	0346	132R	B	2W	040526	W068.8												
132	0400	0427	134A	B															
133	0516	0602	134A	B		055242	W095.7												
134	0742	0802	135A	B		073959	W122.5												
135	0850	0905	135A	B		092716	W149.3												
135	0911	0949	136A	B	2S														
136	1037	1049	136A	B	2S	111412	W176.1												
136	1059	1136	137A	A															
137	1225	1237	137A	A		130149	E157.1												
137	1235	1323	138A	B															
138	1412	1419	138A	B		144905	E130.3												
138	1420	1511	139A	A															
139	1559	1604	139A	A		163622	E103.5												
139	1605	1658	140A	B	2S														
140	1750	1845	141A	A		182338	E076.6												
141	1934	2032	142A	B		201055	E049.8												
142	2121	2220	143A	A		215812	E022.9												
143						234528	W003.8												

**ITPR DATA IS NOT AVAILABLE
FOR THESE ORBITS.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
22 DECEMBER 1972

THIR										ESMR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND	DESC. NODE		DATA		ON OFF		INT	H	DESC. NODE		DATA	
ORBIT	HRMN	HRMN	STON	ORBIT	R	CORR	TIME	LONG	DEC	ORBIT	HRMN	HRMN	STON	ORBIT	R	TIME	LONG	ORBIT	HRMN
ORBIT	HRMN	HRMN	STON	ORBIT	R	CORR	TIME	LONG	DEC	ORBIT	HRMN	HRMN	STON	ORBIT	R	TIME	LONG	ORBIT	HRMN
DAYTIME THIR										ASC. NODE									
144	0050	0056	146R	B			003408	E162.7		145	0050	0248	146R	B					
145	0154	0243	146R	B			022626	E135.9		146	0257	0453	146R	A					
146	0342	0430	146R	A			041342	E109.1		147	0459	0643	147R	A					
147	0529	0617	147R	A			060059	E082.3		148	0642	0805	148A	B					
148	0716	0805	148A	B			074815	E055.5		149	0823	1006	149A	A					
149	0903	0952	149A	A	1S		093532	E028.7		150	1010	1153	150A	B					
150	1051	1139	150A	B	1S2E		112243	E001.9		151	1155	1336	151A	A					
151	1238	1326	151A	A			131005	W025.0		152	1340	1520	152A	B					
152	1425	1514	152A	B			145722	W051.8		153	1524	1705	153A	A					
153	1612	1701	153A	A			164433	W078.6		154	1708	1851	154A	B					
154	1800	1848	154A	B	2E		183155	W105.5		155	1853	2036	155A	A					
155	1947	2035	155A	A			201911	W132.3		156	2038	2223	156A	B					
156	2134	2222	156A	B			225628	W159.1		157	2224	0000	160R	A					
157	2322	0010	160R	B			235345	E174.1											
NIGHTTIME THIR										DESC. NODE									
144	0056	0154	146R	B			013245	W030.6		145	0243	0251	146R	B					
145	0243	0251	146R	B			032001	W057.5		146	0430	0452	146R	A					
146	0430	0452	146R	A			050718	W084.3		147	0617	0641	147R	A					
147	0617	0641	147R	A			065435	W111.1		148	0716	0805	148A	B					
148	0716	0805	148A	B			084151	W137.9		149	0820	0903	149A	A	1N				
149	0820	0903	149A	A	1N		102408	W164.8		150	0952	1003	150A	B	1N2W				
150	0952	1003	150A	B	1N2W		121624	E168.4		151	1003	1051	151A	A					
151	1003	1051	151A	A			140341	E141.6		152	1152	1238	152A	B					
152	1152	1238	152A	B			155057	E114.8		153	1326	1335	153A	A					
153	1326	1335	153A	A			173114	E088.0		154	1337	1425	154A	B	2W				
154	1337	1425	154A	B	2W		192531	E061.1		155	1521	1612	155A	A					
155	1521	1612	155A	A			211247	E034.3		156	1706	1800	156A	B					
156	1706	1800	156A	B			230004	E007.5		157	1850	1947	157A	A					
157	1850	1947	157A	A			004720	W019.3			2036	2134	158R	A					
	2036	2134	158R	A							2224	2322	159R	A					
	2224	2322	159R	A							0010	0022	160R	A					
	0010	0022	160R	A															

**ITPR DATA IS NOT AVAILABLE
FOR THESE ORBITS.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
23 DECEMBER 1972

THIR										ESMR									
		11.5 + 6.7		INT	M	THIR	ASC. AND					ON OFF		INT	M				
DATA	ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC.	MODE		DATA	ORBIT	HRMN	HRMN	ORBIT	D				
				+	R	CORR	TIME	LONG						+	R				
				STON	S	LALO	HRMNSS	DEG						STON	S				
DAYTIME THIR										ASC. NODE									
158							014101	E147.3		159	0212	0327		159R	B				
159	0256	0345		159R	B		032818	E120.5		160	0416	0556		160R	B				
160	0443	0532		160R	B		051534	E093.5		161	0608	0737		161A	B				
161	0631	0719		161A	B	3S2E	070251	E066.8		162	0737	0922		162A	A				
162	0818	0906		162A	A	1N	085008	E040.0		163	0924	1109		163A	B				
163	1005	1054		163A	B		103724	E013.0		164	1111	1255		164A	A				
164	1153	1241		164A	A		122441	E013.5		165	1256	1437		165A	B				
165	1340	1428		165A	B		141157	E040.5		166	1448	1621		166A	A				
166	1527	1616		166A	A		155914	E067.3		167	1624	1808		167A	B				
167	1714	1803		167A	B		174630	E094.1		168	1808	1950		168A	A				
168	1902	1948		168A	A		193347	E120.9		169	1954	2139		169A	B				
169	2049	2134		169A	B		212104	E147.7											
170							230820	E174.6											
NIGHTTIME THIR										DESC. NODE									
158	0212	0256		159R	B		023437	E046.1				0212	0416	159R	B				
159	0345	0409		159R	B		042153	E073.0				0416	0556	160R	B				
159	0416	0443		160R	B							0608	0738	161A	B				
160	0532	0554		160R	B		060910	E099.8				0735	0922	162A	A				
160	0607	0631		161A	B	3N2W						0919	1109	163A	B				
161	0719	0726		161A	B	3N2W	075627	E120.6				1105	1254	164A	A				
161	0734	0818		162A	A	1S						1251	1437	165A	B				
162	0906	0920		162A	A	1S	094343	E153.4				1437	1621	166A	A				
162	0919	1005		163A	B							1621	1807	167A	B				
163	1054	1107		163A	B		113060	E179.8				1807	1950	168A	A				
163	1105	1153		164A	A							1950	2136	169A	B				
164	1241	1253		164A	A		131816	E153.0											
164	1250	1340		165A	B														
165	1428	1434		165A	B		150533	E126.2											
165	1437	1527		166A	A														
166	1619	1714		167A	B		165249	E099.4											
167	1807	1902		168A	A		184006	E072.5											
168	1950	2049		169A	B		202723	E045.7											
169							221439	E018.9											
170							000156	E007.9											
										NENS - SCR - ITPR									
														</					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
24 DECEMBER 1972

THIR							ESMR						
11.5 + 6.7		INT	H	THIR	ASC. AND				INT	H			
DATA	ON	OFF	ORBIT	D	GRID	DESC. NODE	DATA	ON	OFF	ORBIT	D		
ORBIT	HRMN	HRMN	STDN	R	CORR	TIME LONG	ORBIT	HRMN	HRMN	STDN	R		
				S	LALO	HRMNSS DEG					S		
DAYTIME THIR							ASC. NODE						
171						005537 E158.5	172	0116	0316	173R	B		
172	0211	0259	173R	B		024253 E131.8	173	0316	0509	173R	A		
173	0358	0447	173R	A	2S	043010 E105.0	174	0515	0657	174R	A		
174	0545	0634	174R	A		061727 E076.2	175	0658	0837	175A	B		
175	0733	0821	175A	B		080443 E051.1	176	0839	1025	176A	A		
176	0920	1008	176A	A	1S	095200 E024.6	177	1026	1210	177A	B		
177	1107	1156	177A	B	1N	113916 W002.3	178	1211	1354	178A	A		
178	1254	1343	178A	A		132633 W029.1	179	1356	1538	179A	B		
179	1442	1530	179A	B	1N	151349 W055.9	180	1540	1719	180A	A		
180	1629	1717	180A	A		170106 W082.7	181	1724	1905	181A	B		
181	1816	1901	181A	B		184423 W109.6	182	1909	2052	182A	A		
182	2004	2029	182A	A		203539 W136.4	183	2055	2240	183A	B		
182	2029	2051	182A	A	3N		184	2239	0000	186R	A		
183	2151	2239	183A	B		222256 W163.2							
NIGHTTIME THIR							DESC. NODE						
171	0116	0211	173R	B		014912 W034.8	0116	0315	173R	B			
172	0259	0315	173R	B		033629 W061.6	0315	0510	173R	A			
172	0315	0358	173R	A	2N		0515	0656	174R	A			
173	0447	0508	173R	A	2N	052345 W068.4	0655	0837	175A	B			
174	0515	0545	174R	A			0834	1024	176A	A			
174	0634	0655	174R	A		071102 W115.2	1020	1210	177A	B			
174	0655	0733	175A	B			1206	1354	178A	A			
175	0821	0835	175A	B		085819 W142.0	1353	1538	179A	B			
175	0837	0920	176A	A	1N		1536	1719	180A	A			
176	1008	1023	176A	A	1N	104535 W168.9	1720	1905	181A	B			
176	1020	1107	177A	B	1S		1902	2052	182A	A			
177	1156	1209	177A	B	1S	123252 E164.3	2051	2240	183A	B			
177	1205	1254	178A	A			2238	0038	187R	A			
178	1343	1352	178A	A	1S	142000 E137.5							
178	1353	1442	179A	B									
179	1538	1537	179A	B	1S	160725 E110.7							
179	1536	1629	180A	A									
180	1720	1816	181A	B		175441 E083.6							
181	1905	2004	182A	A		194150 E057.0							
182	2052	2151	183A	B		212915 E030.2							
183	2239	2338	187R	A		231631 E003.4							

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
25 DECEMBER 1972

THIR							ESMR						
DATA ORBIT	11.5 + 6.7		INT	H	THIR	ASC. AND	DATA ORBIT			INT	H		
	ON	OFF	ORBIT	D	GRID	DESC. NODE		ON	OFF	ORBIT	D		
	HRMN	HRMN	STDN	R	CORR	TIME LONG		HRMN	HRMN	STDN	R		
				S	LALO	HRMNSS DEG					S		
DAYTIME THIR							ASC. NODE						
184	2338	0027	187R	A		001012 E170.0	186	0228	0427	186R	B		
185						015729 E143.2	187	0432	0610	187R	B		
186	0313	0401	186R	B		034446 E116.3	188	0620	0752	188A	A		
187	0500	0546	187R	B		053202 E089.5	189	0753	0938	189A	B		
188	0647	0736	188A	B		071919 E062.7	190	0941	1125	190A	A		
189	0834	0923	189A	B		090635 E035.2	191	1127	1310	191A	B		
190	1022	1110	190A	A		105352 E009.1	192	1312	1453	192A	A		
191	1209	1258	191A	B		124108 W017.8	193	1456	1637	193A	B		
192	1356	1445	192A	A		142825 W044.7	194	1640	1821	194A	A		
193	1544	1632	193A	B		161542 W071.4	195	1824	2008	195A	B		
194	1731	1819	194A	A		180258 W098.2	196	2010	2153	196A	A		
195	1918	2006	195A	B		195015 W125.0							
196	2105	2152	196A	A		213731 W151.9							
197						232448 W178.7							
NIGHTTIME THIR							DESC. NODE						
184	0027	0037	187R	A		010348 W023.4	NEMS - SCR - ITPR						
185	0228	0313	186R	B		025104 W050.3	0228	0426	186R	B			
186	0401	0425	186R	B		043821 W077.1	0620	0753	188A	A			
186	0432	0500	187R	B			0752	0938	189A	B			
187	0548	0610	187R	B		062538 W103.9	0936	1125	190A	A			
187	0620	0647	188A	B			1122	1310	191A	B			
188	0736	0752	188A	B		081254 W130.7	1307	1453	192A	A			
188	0751	0834	189A	B			1452	1637	193A	B			
189	0923	0936	189A	B		100011 W157.5	1634	1821	194A	A			
189	0935	1022	190A	A			1819	2007	195A	B			
190	1110	1124	190A	A		114727 E175.7	2008	2153	196A	A			
190	1122	1209	191A	B									
191	1258	1309	191A	B		133444 E148.9							
191	1307	1356	192A	A									
192	1445	1452	192A	A		152200 E122.0							
192	1452	1544	193A	B									
193						170917 E095.2							
194	1819	1918	195A	B		185633 E068.4							
195	2008	2105	196A	B		204350 E041.6							
196						223107 E014.8							
197						001023 W012.1							

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
26 DECEMBER 1972

THIR										ESMR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND			DATA		ON OFF		INT	H	ASC. AND			
ORBIT		ON	OFF	ORBIT	D	GRID	DESC.	MODE		ORBIT		HRMN	HRMN	ORBIT	D	DESC.	MODE		
		HRMN	HRMN	STON	R	CORR	TIME	LONG				HRMN	HRMN	STON	R	TIME	LONG		
					S	LALO	HRMNSS	DEG							S				
DAYTIME THIR										ASC. NODE									
198							011205	E154.5		199	0148	0331		200R	B				
199	0227	0316		200R	B		025921	E127.7		200	0330	0526		200R	A				
200	0414	0503		200R	A	1S	044638	E100.9		201	0532	0713		201R	A				
201	0602	0650		201R	A		063354	E074.1		202	0714	0851		202A	B				
202	0749	0838		202A	B		082111	E147.3		203	0856	1041		203A	A				
203	0936	1025		203A	A	2E	100827	E020.4		204	1042	122		204A	B				
204	1124	1212		204A	B		115544	W006.4		205	1235	1409		205A	A				
205	1311	1347		205A	A		134301	W033.2		206	1412	1554		206A	B				
206	1358	1359		205A	A					207	1556	1737		207A	A				
206	1458	1547		206A	B	2S	153017	W060.0		208	1743	1921		208A	B				
207	1645	1734		207A	A		171734	W086.9		209	1925	2107		209A	A				
208	1833	1920		208A	B		190450	W113.7		210	2111	2254		210A	B				
209	2020	2106		209A	A		205207	W140.5											
210	2207	2253		210A	B		223924	W167.3											
NIGHTTIME THIR										DESC. NODE									
198	0148	0227		200R	B		020640	W038.8		0148	0330		200R	B					
199	0316	0330		200R	B		035256	W065.7		0330	0526		200R	A					
199	0329	0414		200R	A	1N				0532	0713		201R	A**					
200	0503	0526		200R	A	1N	054013	W092.5		0713	0851		202A	B**					
200	0532	0602		201R	A					0851	1041		203A	A**					
201	0650	0712		201R	A		072730	W119.3		1037	1227		204A	B**					
201	0713	0749		202A	B					1224	1409		205A	A**					
202	0838	0851		202A	B		091446	W145.2		1409	1554		206A	B**					
202	0851	0936		203A	A	2W				1551	1737		207A	A**					
203	1025	1041		203A	A	2W	110203	W173.0		1734	1921		208A	B**					
203	1037	1124		204A	B					1920	2107		209A	A					
204	1212	1226		204A	B		124919	E160.2		2106	2254		210A	B					
204	1223	1311		205A	B					2254	0056		213R	A					
205	1359	1408		205A	A		143636	E133.4											
205	1409	1458		206A	B	2N													
206	1551	1645		207A	A		162352	E106.6											
207	1734	1833		208A	B		181109	E079.7											
208	1921	2024		209A	A		195826	E052.9											
209	2108	2207		210A	B		214542	E026.1											
210	2256	2354		213R	A		233259	W000.7											

**ITPR DATA IS NOT AVAILABLE
FOR THESE ORBITS.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
27 DECEMBER 1972

THIR										ESMR									
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		11.5 + 6.7		INT	H	THIR	ASC. AND							INT	H				
DATA	ON	OFF	ORBIT	D	GRID	DESC. NODE	TIME	LONG		DATA	ON	OFF	ORBIT	D	GRID	DESC. NODE	TIME	LONG	
ORBIT	HRMN	HRMN	STDN	S	LALO	HRMNSS	DEC			ORBIT	HRMN	HRMN	STDN	S	LALO	HRMNSS	DEC		
DAYTIME THIR										ASC. NODE									
211	2354	0843	213R	A		002640	E165.9			211	2257	0057	213R	A		002640	E165.9		
212						021357	E139.0			213	0245	0439	213R	B		021357	E139.0		
213	0329	0418	213R	B		040113	E112.2			214	0445	0630	214R	B		040113	E112.2		
214	0516	0605	214R	B		054830	E085.4			215	0630	0808	215A	A		054830	E085.4		
215	0704	0752	215A	A		073546	E058.6			216	0810	0955	216A	R		073546	E058.6		
216	0851	0939	216A	B		092303	E031.8			217	0957	1141	217A	A		092303	E031.8		
217	1038	1127	217A	A	1S2E	111020	E004.9			218	1143	1327	218A	B		111020	E004.9		
218	1225	1314	218A	B	1S	125736	W021.9			219	1328	1509	219A	A		125736	W021.9		
219	1413	1501	219A	A	1N	144453	W048.7			220	1512	1655	220A	B		144453	W048.7		
220	1600	1648	220A	B		163209	W075.5			221	1656	1838	221A	A		163209	W075.5		
221	1747	1837	221A	B		181926	W102.3			222	1840	2023	222A	B		181926	W102.3		
222	1934	2022	222A	B		200643	W129.2			223	2029	2211	223A	A		200643	W129.2		
223	2122	2210	223A	B		215359	W156.0									215359	W156.0		
224						234116	E177.2									234116	E177.2		
NIGHTTIME THIR										DESC. NODE									
										NFMS - SCR - ITPR									
211	0043	0055	213R	A		012015	W027.6				0245	0439	213R	B		012015	W027.6		
212	0244	0329	213R	B		030732	W054.4				0444	0630	214R	B		030732	W054.4		
213	0418	0438	213R	B		045448	W081.2				0629	0808	215A	A		045448	W081.2		
213	0444	0516	214R	B	1W						0807	0955	216A	B					
214	0605	0629	214R	B	1W	064205	W108.0				0954	1141	217A	A		064205	W108.0		
214	0630	0704	215A	A							1138	1327	213A	B					
215	0752	0807	215A	A		082922	W134.8				1325	1509	219A	A		082922	W134.8		
215	0804	0851	216A	B							1509	1654	220A	B					
216	0939	0953	216A	B		101638	W161.6				1654	1838	221A	A		101638	W161.6		
216	0954	1038	217A	A	1N2W						1836	2023	222A	B					
217	1127	1140	217A	A	1N2W	120355	E171.6				2022	2211	223A	A		120355	E171.6		
217	1158	1225	218A	B	1N						0001	0200	227R	B					
218	1314	1324	218A	B	1N	135111	E144.8									135111	E144.8		
218	1329	1413*	219A	A	1S														
219	1501	1507	219A	A	1S	153628	E117.9									153628	E117.9		
219	1509	1600	220A	B															
220	1648	1653*	220A	B		172544	E091.1									172544	E091.1		
220	1653	1747	221A	A															
221	1836	1934	222A	B		191301	E064.3									191301	E064.3		
222	2023	2122	223A	A		210018	E037.5									210018	E037.5		
223						224734	E010.6									224734	E010.6		
224	0001	0056	227R	B	1W	003451	W016.2									003451	W016.2		
*6.7 CHANNEL ON-OFF DIFFERENCE																			
218	1335	1413	219A	A															
220	1648	1653	NO DATA																

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
28 DECEMBER 1970

THIR										ESMR									
11.5 + 6.7		INT	H	THIR	ASC. AND		DESC. NODE				INT	H							
DATA	ON	OFF	ORBIT	D	GRID	TIME	LONG	TIME	LONG	DATA	ON	OFF	ORBIT	D					
ORBIT	HRMN	HRMN	STDN	S	CORR	HRMNSS	DEG			ORBIT	HRMN	HRMN	STDN	S	R	S			
DAYTIME THIR										ASC. NODE									
225	0056	0145	227R	B		1E	012832	E150.4		225	0001	0201	227R	B					
226	0244	0332	226R	A			031549	E123.6		226	0159	0358	226R	A					
227	0431	0519	227R	A			050395	E096.8		227	0404	0537	227R	A					
228	0618	0707	228A	A			065022	E070.0		228	0547	0723	228A	A					
229	0805	0854	229A	B			083739	E043.1		229	0724	0909	229A	B					
230	0953	1041	230A	A		3E	102455	E016.3		230	0912	1054	230A	A					
231	1140	1229	231A	B		1S	121212	W010.5		231	1058	1141	231A	B					
232	1327	1416	232A	A			135923	W037.3		232	1243	1426	232A	A					
233	1515	1603	233A	B			154645	W064.1		233	1428	1605	233A	B					
234	1702	1750	234A	A		1N	173401	W091.0		234	1612	1752	234A	A					
235	1849	1937	235A	B			192118	W117.3		235	1756	1938	235A	B					
236	2036	2123	236A	A			210835	W144.6		236	1941	2124	236A	A					
237	2224	2311	237A	B			225511	W171.4		237	2127	2312	237A	B					
										237	2323	2409	240R	A					
NIGHTTIME THIR										DESC. NODE							NEMS - SCR - ITPR		
225	0145	0200	227R	B		1W	022207	W04		0001	0200	227R	B						
226	0159	0244	226R	A						0159	0358	226R	A						
226	0332	0357	226R	A			040924	W069.5		0404	0541	227R	A						
226	0404	0431	227R	A						0547	0723	228A	A						
227	0519	0541	227R	A			055641	W090.6		0723	0909	229A	B						
227	0547	0618	228A	A						0909	1054	230A	A						
228	0707	0722	228A	A			074357	W123.5		1054	1242	231A	B						
228	0723	0805	229A	B						1242	1426	232A	A						
229	0854	0908	229A	B			093114	W150.3		1425	1605	233A	B						
229	0909	0953	230A	A		3W				1610	1752	234A	B						
230	1041	1048	230A	A		3W	111830	W177.1		1751	1938	235A	B						
230	1054	1140	231A	B		1N				1936	2124	236A	A						
231	1229	1240	231A	B		1N	130547	E155.1		2123	2312	237A	B						
231	1242	1327	232A	B						2323	0114	240R	B						
232	1416	1425	232A	B			145303	E129.3											
232	1425	1515	233A	B															
233	1603	1609	233A	B			164020	E102.4											
233	1610	1702	234A	A															
234	1751	1849	235A	B		1S	182736	E075.6											
235	1938	2036	236A	A			201453	E048.8											
236	2125	2224	237A	B			220210	E022.0											
237	2322	0011	240R	A		2N1W	234926	W004.8											

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
29 DECEMBER 1972

THIR										ESMR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND	DESC. AND		DATA		ON OFF		INT	H	THIR	ASC. AND	DESC. AND	
ORBIT	HRMM	HRMM	STDM	ORBIT	R	CORR	TIME	LONG	DEC	ORBIT	HRMM	HRMM	STDM	ORBIT	R	CORR	TIME	LONG	DEC
ORBIT	HRMM	HRMM	STDM	S	LALO	HRMNSS	DEC			ORBIT	HRMM	HRMM	STDM	S	LALO	HRMNSS	DEC		
DAYTIME THIR										ASC. NODE									
238	0011	0059	240R	A	2S1E	004308	E161.7			241	0503	0545	241R	B					
239						023624	E134.9			242	0646	0824	242A	A					
240	0345	0434	240R	B		041741	E108.1			243	0827	1012	243A	B					
241	0533	0621	241R	B	2S	060458	E081.3			244	1013	1155	244A	A					
242	0720	0809	242A	A	1S	075214	E054.5			245	1159	1345	245A	S					
243	0907	0955	243A	B		093931	E027.6			246	1344	1527	246A	A					
244	1055	1143	244A	A		112647	E000.8			247	1528	1709	247A	B					
245	1242	1330	245A	B		131404	E026.0			248	1712	1854	248A	A					
246	1429	1518	246A	A		150120	E052.8			249	1857	2040	249A	B					
247	1616	1705	247A	B		164837	E079.6			250	2042	2228	250A	A					
248	1804	1852	248A	B		183554	E116.7												
249	1951	2039	249A	B	1N	202310	E113.3												
250	2138	2227	250A	A		221027	E101.1												
251						235743	E173.1												
NIGHTTIME THIR										DESC. NODE									
238	0059	0110	240R	A	2S1W	013643	E031.7			NEMS - SCR - ITPR									
239	0301	0345	240R	B		032359	E058.5			0320	0457	240R	A						
240	0434	0456	240R	B		051116	E005.3			0503	0645	241R	B						
241	0532	0533	241R	B	2S					0645	0824	242A	A						
241	0621	0643	241R	B	2S	065832	E112.1			0821	1012	243A	B						
241	0645	0728	242A	B	1S					1012	1155	244A	A						
242	0809	0822	242A	A	1S	084549	E138.9			1155	1344	245A	B						
242	0824	0907	243A	B						1343	1527	246A	A						
243	0956	1011	243A	B		103306	E165.7			1528	1709	247A	B						
243	1011	1053	244A	A						1709	1854	248A	A						
244	1143	1154	244A	A		122022	E167.5			1852	2040	249A	B						
244	1155	1242	245A	B						2040	2228	250A	A						
245	1332	1342	245A	B		140739	E140.6												
245	1343	1429	246A	A															
246	1518	1526	246A	A		155455	E113.8												
246	1528	1616	247A	B															
247	1709	1804	248A	A		174212	E087.0												
248	1852	1951	249A	B	1N	192928	E060.2												
249	2040	2138	250A	A		211645	E033.4												
250						230402	E006.5												
251	0618	0113	251R	B	1S	005118	E020.3												

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
30 DECEMBER 1972

THIR										ESMR									
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		11.5 + 6.7		INT	H	THIR	ASC. AND					INT		H					
DATA	ON	OFF	ORBIT	D	GRID	DESC.	MODE			DATA	ON	OFF	ORBIT	D					
ORBIT	HRMN	HRMN	STDN	R	CORR	TIME	LONG			ORBIT	HRMN	HRMN	STDN	R					
				S	LALO	HRMNSS	DEG							S					
DAYTIME THIR										ASC. MODE									
252	0113	0201	254R	B	1S	014463	E146.3			252	0018	0215	254R	B					
253	0300	0345	253R	A		033217	E119.5			253	0217	0414	253R	A					
254	0447	0536	254R	A		051933	E092.7			254	0419	0558	254R	A					
255	0635	0723	255A	A		070658	E065.8			255	0634	0739	255A	A					
256	0822	0910	256A	B		085406	E039.8			256	0741	0925	256A	B					
257	1009	1058	257A	A		104123	E012.2			257	0928	1110	257A	A					
258	1156	1245	258A	B	2S	122839	W014.6			258	1114	1257	258A	B					
259	1344	1432	259A	A	1S1E	141556	W041.4			259	1259	1442	259A	A					
260	1531	1620	260A	B		160313	W068.3			260	1444	1626	260A	B					
261	1710	1806	261A	A	2S	175029	W095.1			261	1628	1810	261A	A					
262	1905	1953	262A	B		193746	W121.9			262	1812	1954	262A	B					
263	2053	2140	263A	A		212502	W148.7			263	1957	2142	263A	A					
264	2246	2329	267R	B		231219	W175.6			264	2141	2341	267R	B					
NIGHTTIME THIR										DESC. MODE									
252	0201	0216	254R	B	1S	023835	W047.1			NEWS - SCR - ITPR									
252	0216	0300	253R	A						0018	0214	254R	B						
253	0349	0413	253R	A		042551	W073.9			0217	0414	253R	A						
253	0419	0447	254R	A						0419	0558	254R	A						
254	0536	0557	254R	A		061300	W100.8			0604	0739	255A	A						
254	0603	0635	255A	A						0739	0925	256A	B						
255	0723	0739	255A	A		080024	W127.6			0925	1111	257A	A						
255	0739	0822	256A	B						1111	1256	258A	B						
256	0910	0924	256A	B		094741	W154.4			1257	1441	259A	A						
256	0925	1027	257A	B						1441	1626	260A	B						
257	1058	1109	257A	A		113458	E178.8			1625	1809	261A	A						
257	1110	1156	258A	B	2N					1809	1954	262A	B						
258	1245	1252	258A	B	2N	132214	E152.0			1954	2142	263A	A						
258	1256	1344	259A	A	1N1W					2139	2340	267R	B						
259	1437	1439	259A	A	1N1W	150931	E125.1												
259	1441	1531	260A	B															
260	1624	1710	261A	A	2N	165647	E098.3												
261	1809	1905	262A	B		184404	E071.5												
262	1954	2053	263A	A		203120	E044.7												
263	2141	2240	267R	B		221637	E017.9												
264	2329	2339	267R	B		000564	W009.8												

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
31 DECEMBER 1974

THIR										ESMR									
-----										-----									
DATA	11.5 + 6.7		INT	H	THIR	ASC. AND		DESC. MODE	TIME LONG	DATA			INT	H	DESC. MODE	TIME LONG	DATA		
	ON	OFF	ORBIT	D	GRID	HRMN	SS				ON	OFF	ORBIT	D				ON	OFF
ORBIT	HRMN	HRMN	STDN	S	LALO	HRMN	SS	DEC	DEC	ORBIT	HRMN	HRMN	STDN	S	DEC	DEC	ORBIT	HRMN	HRMN
DAYTIME THIR										ASC. NODE									
265						005936		E157.6		267	0310	0512	267R	A			267	0310	0512
266						024652		E130.8		268	0510	0700	268R	A			268	0510	0700
267	0402	0450	267R	A		043409		E104.0		269	0701	0843	269A	B			269	0701	0843
268	0549	0630	268R	A		062125		E077.2		270	0843	1027	270A	A			270	0843	1027
269	0736	0825	269A	B		080642		E050.3		271	1027	1213	271A	B			271	1027	1213
270	0924	1012	270A	A		095550		E023.5		272	1213	1350	272A	A			272	1213	1350
271	1111	1200	271A	B	1S	114315		M003.3		273	1350	1514	273A	B			273	1350	1514
272	1250	1347	272A	A	1N	133032		M030.1		274	1541	1726	274A	A			274	1541	1726
273	1446	1534	273A	B	1E	151748		M056.9		275	1725	1909	275A	B			275	1725	1909
274	1633	1721	274A	A		170505		M003.7		276	1909	2055	276A	A			276	1909	2055
275	1820	1907	275A	B		185221		M118.6		277	2056	2245	277A	B			277	2056	2245
276	2007	2054	276A	A		203938		M137.4											
277	2155	2243	277A	B		222655		M164.2											
NIGHTTIME THIR										DESC. NODE									
265						015319		M035.8		267	0310	0512	267R	A			267	0310	0512
266	0317	0402	267R	A		034827		M062.6		268	0510	0700	268R	A			268	0510	0700
267	0450	0509	267R	A		052743		M089.4		269	0701	0843	269A	B			269	0701	0843
268	0517	0549	268R	A						270	0843	1027	270A	A			270	0843	1027
269	0630	0659	268R	A		071460		M118.2		271	1027	1213	271A	B			271	1027	1213
270	0700	0734	269A	B						272	1213	1350	272A	A			272	1213	1350
271	0825	0840	269A	B		090216		M143.0		273	1350	1514	273A	B			273	1350	1514
272	0843	0924	270A	A						274	1541	1726	274A	A			274	1541	1726
273	0912	1025	270A	A		104933		M163.8		275	1725	1909	275A	B			275	1725	1909
274	1027	1111	271A	B	1N					276	1909	2055	276A	A			276	1909	2055
275	1200	1209	271A	B	1N	123650		E163.3		277	2056	2245	277A	B			277	2056	2245
276	1213	1258	272A	A	1S														
277	1347	1356	272A	A	1S	142406		E130.5											
278	1350	1446	273A	B	1M														
279	1534	1540	273A	B	1M	161123		E109.7											
280	1541	1633	274A	A															
281	1725	1820	275A	B		175039		E002.9											
282	1908	2007	276A	A		194556		E056.1											
283	2056	2155	277A	B		213312		E029.2											
284						232029		E002.4											

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
1 JANUARY 1973**

THIR										ESMR									
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DATA	11.5	6.7	INT	H	THIR	ASC. AND	DESC. NODE			DATA	ON	OFF	INT	H					
ORBIT	ON	OFF	ORBIT	D	GRID	TIME	LONG			ORBIT	HRMM	HRMM	ORBIT	D					
	HRMM	HRMM	STON	R	CORR	HR INSS	DEC				HRMM	HRMM	STON	R					
				S	LALO									S					
DAYTIME THIR										DESC. NODE									
278						001410	E169.0			280	0232	0430	280R	B					
279	129	0218	280R	A		020127	E142.2			281	0435	0617	281R	B					
280	0316	0405	280R	B		034843	E115.4			282	0618	0755	282A	A					
281	0504	0552	281R	B	1W	053560	E088.6			283	0757	0941	283A	B					
282	0651	0740	282A	A		072316	E061.7			284	0945	1129	284A	A					
283	0830	0927	283A	B	1W	091033	E034.9			285	1135	1313	285A	B					
284	1026	1114	284A	A		105750	E008.1			286	1315	1457	286A	A					
285	1213	1301	285A	B		124506	W018.7			287	1500	1641	287A	B					
286	1400	1449	286A	A		143223	W045.6			288	1644	1825	288A	A					
287	1547	1636	287A	B		161939	W072.4			289	1828	2010	289A	B					
288	1735	1823	288A	A		180656	W099.2			290	2014	2150	290A	A					
289	1922	2009	289A	B		195413	W126.0			291	2159	2355	291R	B					
290	2109	2157	290A	A		214129	W152.0												
291	2256	2345	291R	B		232046	W179.7												
NIGHTTIME THIR										NEMS - SCR - ITPR									
-----										-----									
DATA	11.5	6.7	INT	H	THIR	ASC. AND	DESC. NODE			DATA	ON	OFF	INT	H					
ORBIT	ON	OFF	ORBIT	D	GRID	TIME	LONG			ORBIT	HRMM	HRMM	ORBIT	D					
	HRMM	HRMM	STON	R	CORR	HR INSS	DEC				HRMM	HRMM	STON	R					
278	0047	0129	280R	A		010745	W024.4			0126	0233	280R	A						
279	0218	0232	280R	A		025501	W051.2			0232	0430	280R	B						
279	0232	0316	280R	B						0435	0616	281R	B						
280	0405	0429	280R	B		044218	W078.0			0617	0755	282A	A						
280	0435	0504	281R	B	1E					0755	0941	283A	B						
281	0552	0615	281R	B	1E	062934	W104.9			0941	1129	284A	A						
281	0617	0651	282A	B						1134	1313	285A	B						
282	0740	0754	282A	A		081651	W131.7			1313	1457	286A	A						
282	0755	0838	283A	B	1E					1456	1641	287A	B						
283	0927	0939	283A	B	1E	100407	W158.5			1640	1825	288A	A						
283	0941	1026	284A	A						1824	2010	289A	B						
284	1114	1127	284A	A		115124	E174.7			2014	2150	290A	A						
284	1134	1213	285A	B															
285	1301	1311	285A	B		131841	E147.9												
285	1314	1400	286A	B															
286	1449	1455	286A	A		152557	E121.0												
286	1455	1547	287A	B															
287	1640	1735	288A	A		171314	E094.2												
288	1824	1922	289A	B		190030	E067.4												
289	2014	2109	290A	A		294747	E040.6												
290	2150	2256	291R	B		223503	E013.0												
291	2345	2356	291R	B		002220	W013.1												

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
2 JANUARY 1973**

THIR										ESMR									
-----										-----									
DATA	11.5 + 6.7		INT	H	THIR	ASC. AND	DESC. MODE						INT	H					
ORBIT	ON	OFF	ORBIT	D	GRID	TIME	LONG			DATA	ON	OFF	ORBIT	D					
	HRMN	HRMN	STDN	R	CORR	HRMNOG	SEC			ORBIT	HRMN	HRMN	STDN	R					
				S	LALO									S					
DAYTIME THIR										ASC. MODE									
292						01160.	E153.5			294	0354	0530	294R	A					
293	0231	0320	293R	A		030319	126.7			295	0534	0710	295R	A					
294	0418	0507	294R	A		045436	E099.9			296	0710	0855	296A	B					
295	0606	0654	295R	A		063752	E073.1			297	0859	1044	297A	A					
296	0753	0841	296A	B	2E	082509	E046.2			298	1046	1228	298A	B					
297	0940	1029	297A	A	1S1W	101225	E019.4			299	1231	1409	299A	A					
298	1127	1216	298A	B		115942	W007.4			300	1415	1557	300A	B					
299	1315	1403	299A	A		134658	W034.2			301	1559	1741	301A	A					
300	1502	1551	300A	B		153415	W061.0			302	1744	1924	302A	B					
301	1649	1738	301A	A		172131	W087.8			303	1929	2112	303A	A					
302	1836	1923	302A	B	1W	190848	W114.6			304	2115	2301	304A	B					
303	2024	2112	303A	A		205605	W141.5												
304	2211	2300	304A	B		224321	W168.3												
NIGHTTIME THIR										DESC. MODE									
292	0147	0231	293R	A		020937	W039.9			NEWS - SCR - ITPR									
293	0320	0346	293R	A		035653	W066.7			0211	0347		293R	A					
293	0354	0418	294R	A						0354	0529		294R	A					
294	0507	0520	294R	A		054410	W093.5			0534	0710		295R	A					
294	0534	0606	295R	A						0710	0855		296A	B					
295	0654	0716	295R	A		073126	W120.3			0856	1044		297A	A					
295	0718	0753	296A	B	2E					1034	1228		298A	B					
296	0841	0854	296A	B	2E	091043	W147.2			1229	1409		299A	A					
296	0855	0940	297A	A						1412	1557		300A	B					
297	1029	1035	297A	A		110559	W174.0			1555	1741		301A	A					
297	1043	1127	298A	B	1W1W					1741	1925		302A	B					
298	1216	1227	298A	B	1W1W	125316	E159.2			1925	2113		303A	A					
298	1228	1315	299A	A						2112	2301		304A	B					
299	1403	1411	299A	A		144033	E132.4												
299	1412	1502	300A	B															
300	1554	1649	301A	A		162749	E105.6												
301	1741	1836	302A	B	1W	181506	E078.0												
302	1925	2024	303A	A		200222	E052.0												
303	2112	2211	304A	B		214939	E025.1												
304						233655	W001.7												

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
3 JANUARY 1973**

THIR										ESMR									
-----										-----									
DATA	11.5	+ 6.7	INT	H	THIR	ASC. AND				DATA	ON	OFF	INT	H	THIR	ASC. AND			
ORBIT	HRMM	HRMM	ORBIT	D	GRID	DESC. NODE	TIME	LONG		ORBIT	HRMM	HRMM	ORBIT	D	GRID	DESC. NODE	TIME	LONG	
			+	R	CORR								+	R	CORR				
			STDN	S	LALO	MMNSS	DEC						STDN	S	LALO	MMNSS	DEC		
DAYTIME THIR										DESC. NODE									
305						003030	E164.9			306	0104	0240	307R	A					
306	0146	0234	307R	A		021754	E138.1			307	0246	0445	307R	B					
307	0333	0421	307R	B		040511	E111.3			308	0451	0632	308R	B					
308	0520	0609	308R	R		055228	E084.4			309	0634	0812	309A	A					
309	0707	0756	309A	A		073444	E057.6			310	0814	0957	310A	B					
310	0855	0943	310A	B		092701	E030.8			311	1001	1144	311A	A					
311	104	1131	311A	A		111417	E004.0			312	1147	1328	312A	B					
312	1229	1318	312A	B	2E	130134	W022.9			313	1331	1514	313A	A					
313	1417	1505	313A	A		144850	W049.7			314	1515	1659	314A	B					
314	1604	1652	314A	B		163607	W076.5			315	1659	1844	315A	A					
315	1751	1840	315A	A		182324	W103.3			316	1844	2030	316A	B					
316	1938	2027	316A	B		201840	W130.1			317	2030	2216	317A	A					
317	2126	2214	317A	A		215757	W157.0			318	2221	0000	321R	B					
318	2313	0001	321R	B	1W	234513	E176.2												
NIGHTTIME THIR										NEWS - SCR - ITPR									
305	0114	0146	307R	A		012412	W078.5			0114	0257	307R	A						
306	0234	0256	307R	A		031129	W055.3			0244	0444	307R	B						
306	0244	0333	307R	B						0451	0632	308R	B						
307	0421	0444	307R	B		045045	W082.2			0633	0811	309A	A						
307	0451	0520	308R	B						0811	0957	310A	B**						
308	0609	0631	308R	B		064602	W109.0			0957	1145	311A	A**						
308	0632	0707	309A	A						1144	1328	312A	B**						
309	0756	0818	309A	A		083310	W135.0			1327	1514	313A	A**						
309	0811	0855	310A	B						1514	1659	314A	B**						
310	0943	0955	310A	B		102035	W162.6			1658	1844	315A	A						
310	0957	1042	311A	A						1839	2030	316A	B						
311	1131	1143	311A	A		120751	E170.6			2027	2217	317A	A						
311	1144	1229	312A	B	2E					2221	0014	321R	B						
312	1318	1327	312A	B	2E	135508	E143.7												
312	1327	1417	313A	A															
313	1505	1513*	313A	A		154225	E116.9												
313	1514	1604	314A	B															
314	1652	1658*	314A	B		172941	E090.1												
314	1658	1751	315A	A															
315	1840	1938	316A	B		191657	E063.3												
316	2027	2126	317A	A		210414	E036.5												
317	2215	2313	321R	B	1W	225131	E009.7												
318	0001	0013	321R	B	1W	003847	W017.2												

*6.7 CHANNEL ON-OFF DIFFERENCE

313 1505 1513 NO DATA
314 1652 1658 NO DATA

**ITPR DATA IS NOT AVAILABLE
FOR THESE ORBITS.

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
4 JANUARY 1973**

THIR										L3MR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND	DESC. MODE		DATA		ON	OFF	INT	H	DESC. MODE		DATA	
ORBIT	HRMN	HRMN	STDN	ORBIT	D	GRID	TIME	LONG	DEC	ORBIT	HRMN	HRMN	STDN	ORBIT	D	TIME	LONG	ORBIT	HRMN
					R	CORR									R				
					S	LALO									S				
DAYTIME THIR										ASC. NODE									
319							013230	E149.4		320	0203	0401		320R	A				
320	0247	0336		320R	A		031947	E122.6		321	0406	0543		321R	A				
321	0435	0523		321R	A		050703	E095.0		322	0551	0727		322A	A				
322	0622	0711		322A	A		065420	E069.0		323	0720	0913		323A	B				
323	0809	0858		323A	B		084136	E042.1		324	0916	1057		324A	A				
324	0957	1045		324A	A	1E	102053	E015.3		325	1102	1245		325A	B				
325	1144	1232		325A	B	2N	121609	W011.5		326	1247	1429		326A	A				
326	1331	1420		326A	A		140326	W030.3		327	1431	1614		327A	B				
327	1510	1607		327A	B		155043	W065.1		328	1615	1756		328A	A				
328	1706	1755		328A	A		173759	W091.9		329	1800	1942		329A	B				
329	1853	1940		329A	B		192516	W110.0		330	1945	2120		330A	A				
330	2040	2127		330A	A		211232	W145.6		331	2131	2315		331A	B				
331	2227	2314		331A	B		225949	W172.4											
NIGHTTIME THIR										DESC. NODE									
319	0203	0247		320R	A		022604	W044.0		NEMS - SCR - ITPR									
320	0336	0360		320R	A		041321	W070.0		0203	0401		320R	A					
320	0406	0435		321R	A					0406	0543		321R	A					
321	0523	0543		321R	A		060037	W097.6		0550	0727		322A	A					
321	0550	0622		322A	A					0720	0913		323A	B					
322	0711	0726		322A	A		074754	W124.4		0913	1057		324A	A					
322	0727	0809		323A	B					1056	1245		325A	B					
323	0858	0911		323A	B		093510	W151.3		1245	1429		326A	A					
323	0913	0957		324A	A	1E				1420	1614		327A	B					
324	1045	1056		324A	A	1E	112227	W170.1		1610	1756		328A	A					
324	1055	1144		325A	B	2S				1740	1942		329A	B					
325	1245	1331		326A	A		130943	E155.1		1942	2120		330A	A					
326	1420	1427		326A	A		145660	E120.3		2129	2315		331A	B					
326	1427	1510		327A	B	2S													
327	1607	1613		327A	B	2S	164417	E101.5											
327	1610	1706		328A	A														
328	1755	1853		329A	B		183133	E074.7											
329	1942	2040		330A	A		201050	E047.0											
330	2129	2227		331A	B		220606	E021.0											
331							235323	W005.0											

*6.7 CHANNEL ON-OFF DIFFERENCE

325 1232 1242 325A B
325 1245 1331 326A A

THE ORIGINAL

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**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
6 JANUARY 1973**

THIR										ESMR									
-----										-----									
DATA	ON	OFF	INT	H	THIR	ASC. AND				DATA	ON	OFF	INT	H	THIR	ASC. AND			
ORBIT	HRMM	HRMM	ORBIT	D	GRID	DESC. NODE	TIME	LONG		ORBIT	HRMM	HRMM	ORBIT	D	GRID	DESC. NODE	TIME	LONG	
			+	R	CORR			DEG					+	R	CORR			DEG	
			STON	S	LALO	HRMNSS							STON	S	LALO	HRMNSS			
DAYTIME THIR										ASC. NODE									
345	2329	0010	348R	B		000141	E172.1			347	0219	0417	347R	A					
346						014050	E145.3			348	0423	0601	348R	A					
347	0304	0352	347R	A		033614	E118.5			349	0607	0740	349A	A					
348	0451	0540	348R	A		052331	E091.7			350	0743	0928	350A	B					
349	0638	0727	349A	A		071047	E064.9			351	0932	1115	351A	A					
350	0826	0914	350A	B		085604	E038.0			352	1110	1259	352A	B					
351	1013	1102	351A	A		104521	E011.2			353	1343	1444	353A	A					
352	1201	1249	352A	B		123237	M015.6			354	1447	1632	354A	B					
353	1348	1437	353A	A		141954	M042.4			355	1631	1815	355A	A					
354	1535	1624	354A	B	2S1E	160710	M069.2			356	1816	1959	356A	B					
355	1722	1811	355A	A		175427	M096.1			357	2001	2145	357A	A					
356	1910	1957	356A	B		194143	M122.9												
357	2057	2144	357A	A	1E	212900	M149.7												
358						231617	M176.5												
*6.7 CHANNEL ON-OFF DIFFERENCE																			
358	0826	0900	358A	B															
NIGHTTIME THIR										DESC. NODE									
345	0010	0030	348R	B		005515	M021.3			NEMS - SCR - ITPR									
346	0220	0304	347R	A		024232	M040.1			0221	0417	347R	A						
347	0352	0415	347R	A		042948	M074.9			0423	0601	348R	A						
347	0423	0451	348R	A						0607	0741	349A	A						
348	0540	0600	348R	A		061704	M101.7			0742	0927	350A	B						
348	0606	0638	349A	A						0928	1115	351A	A						
349	0727	0740	349A	A		080421	M128.5			1114	1259	352A	B						
349	0742	0826	350A	B						1259	1444	353A	A						
350	0914	0926	350A	B		095138	M155.4			1444	1633	354A	B						
350	0927	1013	351A	A						1631	1815	355A	A						
351	1102	1113	351A	A		113054	E177.8			1817	1959	356A	B						
351	1113	1201	352A	B						1950	2145	357A	A**						
352	1249	1257	352A	B		132611	E151.0			**ITPR DATA IS NOT AVAILABLE FOR THESE ORBITS.									
352	1259	1348	353A	A															
353	1437	1442	353A	A		151327	E124.2												
353	1443	1535	354A	B	2N1E														
354	1624	1631	354A	B	2N1E	170044	E097.4												
354	1631	1722	355A	A															
355	1814	1910	356A	B		184800	E070.5												
356	1950	2057	357A	A	1E	203517	E043.7												
357						222234	E016.9												
358						000950	M009.9												

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
7 JANUARY 1973

THIR							ESMR						
-----							-----						
DATA	11.5 + 6.7	INT	H	THIR	ASC. AND				INT	H			
ORBIT	ON OFF	ORBIT	D	GRID	DESC. NODE				ORBIT	D			
	HRMN HRMN	+ STDN	R	CORR	TIME LONG				+ STDN	R			
			S	LALO	HRMNSS DEG					S			
DAYTIME THIR							ASC. NODE						
359					010333 E156.7		360	0134 0324	361R	B			
360	0219 0307	361R	B	1N2E	025050 E129.8		361	0322 0513	361R	A			
361	0406 0455	361R	A	2N	043806 E103.8		362	0521 0703	362R	A			
362	0553 0642	362R	A		062523 E076.2		363	0706 0843	363A	B			
363	0741 0829	363A	B		081240 E049.4		364	0847 1029	364A	A			
364	0928 1016	364A	B		095956 E022.6		365	1033 1215	365A	B			
365	1115 1204	365A	B		114713 W004.3		366	1219 1402	366A	A			
366	1303 1351	366A	A		133429 W031.1		367	1403 1545	367A	B			
367	1450 1538	367A	B		152146 W057.9		368	1547 1729	368A	A			
368	1637 1726	368A	A		170902 W084.7		369	1731 1913	369A	B			
369	1824 1912	369A	B		185619 W111.6		370	1916 2102	370A	A			
370	2011 2100	370A	A		204336 W138.4		371	2102 2247	371A	B			
371	2159 2246	371A	B		223052 W165.2		372	2252 0050	374A	B			
NIGHTTIME THIR							DESC. NODE						
359	0134 0219	361R	B	1S2E	015707 W036.7								
360	0307 0323	361R	B	1S2E	034423 W063.6								
360	0323 0406	361R	A	CS									
361	0459 0512	361R	A	2S	053140 W090.4								
361	0520 0553	362R	A										
362	0642 0702	362R	A		071056 W117.2								
362	0703 0741	363A	B										
363	0829 0843	363A	B		090613 W144.0								
363	0844 0928	364A	B										
364	1016 1028	364A	B		105330 W170.8								
364	1029 1115	365A	B										
365	1204 1214	365A	B		124046 E162.3								
365	1215 1303	366A	A										
366	1351 1401	366A	A		142803 E135.5								
366	1400 1450	367A	B										
367	1538 1540	367A	B		161519 E103.7								
367	1544 1637	368A	A										
368	1729 1824	369A	B		180236 E081.9								
369	1913 2011	370A	A		194952 E055.1								
370	2100 2159	371A	B		213709 E028.3								
371	2252 2346	374R	A	2W	232426 E001.5								
							NEMS - SCR - ITPR						

							0134 0323	361R	B	**			
							0323 0512	361R	A	**			
							0520 0703	362R	A	**			
							0703 0843	363A	B	**			
							0843 1029	264A	A	**			
							1029 1215	365A	B	**			
							1215 1402	366A	A	**			
							1401 1545	367A	B	**			
							1544 1730	368A	A	**			
							1729 1914	369A	B	**			
							1912 2102	370A	A	**			
							2059 2247	371A	B				
							2252 0049	374R	B				

••ITPR DATA IS NOT AVAILABLE
FOR THESE ORBITS.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
8 JANUARY 1973

THIR										ESMR									
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11.5 + 6.7			INT	H	THIR	ASC. AND							INT	H					
DATA	ON	OFF	ORBIT	D	GRID	DESC.	NODE			DATA	ON	OFF	ORBIT	D					
ORBIT	HRMN	HRMN	STDN	R	COORD	TIME	LONG			ORBIT	HRMN	HRMN	STDN	R					
				S	LALO	HRMNSS	DEG							S					
DAYTIME THIR										ASC. NODE									
372	2346	0035	374R	A	2E	001809	E168.0			374	0237	0432	374R	A					
373						020525	E141.2			375	0438	0618	375R	A					
374	0321	0409	374R	B		035242	E114.4			376	0623	0755	376A	B					
375	0508	0557	375R	B		053959	E087.6			377	0801	0943	377A	A					
376	0655	0744	376A	B		072715	E060.7			378	0949	1130	378A	B					
377	0843	0931	377A	A		091432	E033.9			379	1135	1317	379A	A					
378	1038	1118	378A	A		110148	E007.1			380	1319	1500	380A	B					
379	1217	1306	379A	A		124905	W019.7			381	1504	1631	381A	A					
380	1404	1453	380A	B	1W	143621	W046.5			382	1648	1832	382A	B					
381	1552	1631	381R	A		162338	W073.4			383	1832	2015	383A	A					
381	1632	1840	382A	B	1N					384	2018	2202	384A	B					
382	1739	1928*	382A	B	1N	181055	W130.2												
383	1926	2010	383A	A	2N	195811	W127.0												
384	2114	2200	384A	B		214528	W153.8												
385						233244	E179.4												

*6.7 CHANNEL ON-OFF DIFFERENCE

382 1739 1811 382A B

NIGHTTIME THIR										DESC. NODE									
372	0035	0048	374R	A	2E	0111.2	W025.4												
373	0237	0321	374R	B		025859	W052.2												
374	0409	0427	374R	B		044615	W079.0												
374	0438	0508	375R	B															
375	0557	0617	375R	B		063332	W105.8												
375	0623	0655	376A	B															
376	0744	0758	376A	B		082048	W132.7												
376	0759	0843	377A	A															
377	0931	0942	377A	A		100805	W159.5												
377	0944	1030	378A	A															
378	1118	1129	378A	A		115522	E173.7												
378	1131	1217	379A	A															
379	1306	1317	379A	A		134238	E146.9												
379	1316	1404	380A	B	1W														
380	1500	1552	381R	A		152955	E120.1												
381	1640	1739	382A	B	1S	171711	E093.2												
382	1828	1926	383A	B	2S	190428	E066.4												
383	2015	2114	384A	B		205144	E039.6												
384						223901	E012.8												
385	0005	0048	388R	A		002618	W014.0												

NENS - SCR - ITPR

0237	0432	374R	A						
0438	0618	375R	A						
0623	0759	376A	B						
0758	0944	377A	A						
0944	1130	378A	B						
1131	1318	379A	A						
1317	1501	380A	B						
1459	1632	381A	A						
1632	1832	382A	B						
1848	2017	383A	A						
2014	2202	384A	B						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
9 JANUARY 1973

THIR								ESMR							
		11.5 + 6.7		INT	H	THIR	ASC. AND			ON OFF		INT	H	THIR	ASC. AND
DATA	ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. NODE	DATA	ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. NODE
				+	R	CORR	TIME LONG					+	R	CORR	TIME LONG
ORBIT				STON	S	LALO	HRMNSS DEG	ORBIT				STON	S	LALO	HRMNSS DEG
DAYTIME THIR								ASC. NODE							
386	0048	0137		388R	A		012001 E152.5	386	0005	0157		388R	A		
387	0235	0324		387R	B		030717 E125.7	387	0152	0349		387R	B		
388	0423	0511		388R	B	1N1E	045434 E098.9	388	0354	0533		388R	B		
389	0610	0659		389A	B		064151 E072.1	389	0538	0715		389A	B		
390	0757	0846		390A	A		082907 E045.3	390	0716	0859		390A	A		
391	0944	1033		391A	B		101621 E018.4	391	0903	1044		391A	B		
392	1132	1220		392A	A		120340 W008.4	392	1050	1233		392A	A		
393	1319	1408		393A	B		135057 W035.2	393	1245	1418		393A	B		
394	1506	1555		394A	A		153814 W062.0	394	1420	1601		394A	A		
395	1654	1742		395A	B	2E	172530 W088.9	395	1603	1746		395A	B		
396	1841	1929		396A	A		191247 W115.7	396	1748	1930		396A	A		
397	2028	2115		397A	B		210003 W142.5	397	1933	2116		397A	B		
398	2215	2303*		398A	A		224720 W169.3	398	2119	2304		398A	A		

*6.7 CHANNEL ON-OFF DIFFERENCE
398 2215 2250 398A A

NIGHTTIME THIR								DESC. NODE							
DATA	ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. NODE	DATA	ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. NODE
				+	R	CORR	TIME LONG					+	R	CORR	TIME LONG
ORBIT				STON	S	LALO	HRMNSS DEG	ORBIT				STON	S	LALO	HRMNSS DEG
386	0137	0156		388R	A		021334 W040.9	0005	0157			388R	A		
386	0152	0235		387R	B			0152	0349			387R	B		
387	0324	0347		387R	B		040051 W067.7	0354	0533			388R	B		
387	0401	0423		388R	B	1S1W		0538	0715			389A	B		
388	0511	0532		388R	B	1S1W	054807 W094.5	0716	0859			390A	A		
388	0538	0610		389A	B			0858	1044			391A	B		
389	0659	0714		389A	B		073524 W121.3	1045	1231			392A	A		
389	0714	0757		390A	A			1232	1418			393A	B		
390	0846	0857		390A	A		092240 W148.1	1416	1601			394A	A		
390	0905	0944*		391A	B			1601	1746			395A	B		
391	1033	1043		391A	B		110957 W175.0	1746	1930			396A	A		
391	1044	1132		392A	A			1929	2117			397A	B		
392	1220	1231		392A	A		125714 E158.2	2117	2304			398A	A		
392	1232	1319		393A	B			2305	0105			401R	B		
393	1408	1415		393A	B		144430 E131.4								
393	1416	1506		394A	A										
394	1555	1600		394A	A		163147 E104.6								
394	1601	1654		395A	B	2E									
395	1746	1841		396A	A		181903 E077.8								
396	1929	2028		397A	B		200620 E051.0								
397	2117	2215		398A	A		215336 E024.2								
398	2305	0003		401R	B		234053 W002.7								

*6.7 CHANNEL ON-OFF DIFFERENCE
390 0858 0944 391A B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
10 JANUARY 1973

THIR							ESMR				
DATA ORBIT	11.5 + 6.7		INT	H	THIR	ASC. AND	DATA ORBIT	ON	OFF	INT	H
	ON	OFF	ORBIT	D	GRID	DESC. NODE		HRMN	HRMN	ORBIT	D
	HRMN	HRMN	STON	S	CORR	TIME LONG				STON	R
					LALO	HRMNSS DEG					S
DAYTIME THIR							ASC. NODE				
399	0003	0051	401R	B		003437 E163.9	399	2305	0105	401R	B
400						022153 E137.1	401	0252	0446	401R	A
401	0337	0426	401R	A		040910 E110.3	402	0452	0635	402R	A
402	0525	0613	402R	A		055626 E083.5	403	0638	0816	403A	B
403	0712	0800	403A	B		074343 E056.6	404	0818	1000	404A	A
404	0859	0946	404A	A		093059 E029.8	405	1005	1149	405A	B
405	1046	1335	405A	B		111816 E003.0	406	1151	1333	406A	A
406	1234	1322	406A	A		130532 W023.8	407	1335	1504	407A	B
407	1421	1502	407R	B		145249 W050.7	408	1520	1645	408A	A
407	1502	1510	408R	A			409	1703	1844	409A	B
408	1608	1646	408R	A		164006 W077.5	410	1848	2032	410A	A
408	1646	1657	409A	B			411	2034	2220	411A	B
409	1755	1843	409A	B		182722 W104.3					
410	1943	2031	410A	A		201439 W131.1					
411	2130	2219	411A	B	3N	220155 W157.9					
412						234012 E175.2					
NIGHTTIME THIR							DESC. NODE				
399	0051	0104	401R	B		012810 W019.5					
400	0252	0337	401R	A		031526 W016.3					
401	0426	0446	401R	A		050243 W083.1					
401	0452	0525	402R	A							
402	0613	0634	402R	A		064959 W109.9					
402	0634	0712	403A	B							
403	0800	0815	403A	B		083716 W136.8					
403	0815	0859	404A	A							
404	0948	0954*	404A	A		102432 W163.6					
404	1000	1046	405A	B							
405	1135	1148	405A	B		121149 E169.6					
405	1148	1234	406A	A							
406	1322	1332	406A	A		135906 E142.8					
406	1331	1421	407R	B							
407	1510	1608	408R	A		154622 E116.0					
408	1657	1755	409A	B		173339 E089.1					
409	1844	1943	410A	A		192055 E062.3					
410	2032	2130	411A	B	3S	210812 E035.5					
411						225528 E008.7					
412	0022	0105	415R	B		004245 W018.1					

*6.7 CHANNEL ON-OFF DIFFERENCE
404 0948 0954 NO DATA

NEMS - SCP - ITPR				
0253	0447	401R	A	
0453	0635	402R	A	
0634	0816	403A	B	
0815	1000	404A	A	
1000	1149	405A	B	
1148	1332	406A	B	
1332	1504	407A	B	
1502	1645	408A	A	
1646	1844	409A	B	
1843	2032	410A	B	
2031	2219	411A	B	

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
11 JANUARY 1973

THIR										ESMR									
		11.5 + 6.7		INT	H	THIR	ASC. AND					INT	H						
DATA	ON	OFF		ORBIT	D	GRID	DESC.	NODE		DATA	ON	OFF		ORBIT	D	DESC.	NODE		
ORBIT	HRMN	HRMN	STDN		R	CORN	TIME	LONG		ORBIT	HRMN	HRMN	STDN		R	TIME	LONG		
					S	LALO	HRMNSS	DEG							S				
DAYTIME THIR										ASC. NODE									
413	0105	0153		415R	B		013629	E148.4		413	0022	0216		415R	B				
414	0252	0340		414R	A		032345	E121.6		414	0213	0403		414R	A				
415	0439	0528		415R	A		051102	E094.8		415	0402	0548		415R	A				
416	0626	0715		416A	A	1E	065818	E068.0		416	0554	0729		416A	A				
417	0814	0902		417A	B		084535	E041.1		417	0732	0916		417A	B				
418	1001	1050		418A	A		103251	E114.3		418	0920	1102		418A	A				
419	1148	1237		419A	B	1W	122008	W012.5		419	1106	1248		419A	B				
420	1336	1424		420A	A	1N	140725	W039.3		420	1251	1432		420A	A				
421	1523	1611		421A	B	1S	155441	W066.1		421	1436	1617		421A	B				
422	1710	1759		422A	A		174158	W093.0		422	1619	0804		422A	A				
423	1857	1945		423A	B	1E	192914	W119.8		423	1804	1947		423A	B				
424	2045	2133		424A	A		211631	W146.6		424	1949	2134		424A	A				
425	2232	2320		425A	B		230347	W173.4		425	2136	2323		425A	B				
NIGHTTIME THIR										DESC. NODE									
413	0153	0214		415R	B		023002	W045.0		413	0022	0215		415R	B				
413	0213	0252		414R	A		041718	W071.8		413	0213	0403		414R	A				
414	0340	0402		414R	A		060435	W098.6		414	0409	0548		415R	A				
414	0409	0439		415R	A		075151	W125.4		414	0554	0730		416A	A				
415	0528	0547		415R	A		093908	W152.3		415	0729	0916		417A	B				
415	0554	0626		416A	A	1E	112624	W179.1		415	0916	1102		418A	A				
416	0715	0728		416A	A	1E	131341	E154.1		416	1102	1248		419A	B				
416	0729	0814		417A	B		150057	E127.3		416	1248	1432		420A	A				
417	0902	0910*		417A	B		164814	E100.5		417	1432	1617		421A	B				
417	0916	1001		418A	A		183531	E073.7		417	1617	1804		422A	A				
418	1050	1101		418A	A		202247	E046.9		418	1803	1947		423A	B				
418	1102	1148		419A	B	1W	221004	E020.0		418	1947	2134		424A	A				
419	1237	1247		419A	B	1W	235720	W000.8		419	2132	2323		425A	B				
419	1248	1336		420A	A	1S				419	2322	0123		426R	A				
420	1424	1431		420A	A	1S				420									
420	1432	1523		421A	B	1N				420									
421	1611	1617		421A	B	1N				421									
421	1617	1710		422A	A					421									
422	1802	1857		423A	B	1E				422									
423	1946	2045		424A	A					423									
424	2133	2232		425A	B					424									
425	2322	0019		426R	A					425									

*6.7 CHANNEL ON-OFF DIFFERENCE
417 0902 0915 417A B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
12 JANUARY 1973

THIR										ESMR									
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DATA	11.5	+ 6.7	INT	H	THIR	ASC. AND				DATA	ON	OFF	INT	H	THIR	ASC. AND			
ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. NODE	TIME	LONG		ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. NODE	TIME	LONG	
			STDM	S	LA LO	HRMNSS	DEC						STDM	S	LA LO	HRMNSS	DEC		
DAYTIME THIR										ASC. NODE									
426	0019	0100	420R			005105	E159.0			426	2322	0122	420R	A					
427						023021	E133.0			428	0314	0503	420R	B					
428	0354	0442	420R	B	1E	042537	E106.2			429	0507	0652	429R	B					
429	0541	0630	429R	B		061254	E079.3			430	0654	0831	430A	A					
430	0720	0817	430A	A		080610	E052.5			431	0835	10	431A	B					
431	0915	1004	431A	B		094727	E025.7			432	1021	1204	432A	A					
432	1103	1151	432A	A		113444	W001.1			433	1207	1351	433A	B					
433	1250	1339	433A	B		132200	W020.0			434	1351	1537	434A	A					
434	1437	1526	434A	A		150917	W054.0			435	1535	1717	435A	B					
435	1625	1713	435A	B	2N	165653	W081.6			436	1720	1902	436A	A					
436	1812	1901	436A	A		184359	W100.4			437	1900	2048	437A	B					
437	1959	2047	437A	B		203106	W135.2			438	2047	2235	438	A					
438	2147	2234	438A	A		221023	W162.1												
NIGHTTIME THIR										DESC. NODE									
426	0100	0122	420R	A		014437	W033.6												
427	0314	0354	420R	B	1E	033153	W060.4												
428	0442	0502	420R	B	1E	051910	W087.2												
429	0507	0541	429R	B		070627	W114.1												
429	0630	0650	429R	B															
429	0652	0720	430A	A		085343	W140.9												
430	0727	0830	430A	A															
430	0831	0916	431A	B		104060	W167.7												
431	1004	1017	431A	B															
431	1017	1103	432A	A		122016	E165.5												
432	1151	1203	432A	A															
432	1203	1250	433A	B		141553	E130.7												
433	1339	1349	433A	B															
433	1350	1437	434A	A		160249	E111.0												
434	1526	1532	434A	A															
434	1532	1625	435A	B	2S	175006	E065.0												
435	1716	1812	436A	A		193723	E050.2												
436	1901	1959	437A	B		212439	E031.4												
437	2048	2147	438A	A		231156	E004.6												
438																			

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
13 JANUARY 1973

THIR					ESMR				
-----					-----				
DATA	11.5	6.7	INT	H	THIR	ASC. AND		INT	H
ORBIT	ON	OFF	ORBIT	D	GRID	DESC. NODE		ORBIT	D
	HRMN	HRMN	STON	R	CORR	TIME LONG		STON	R
				S	LALO	HRMNSS DEG			S
DAYTIME THIR					ASC. NODE				
439						000540 E171.1		440	0037 0229 442R B
440	0121	0210	442R	B		015256 E144.3		441	0224 0410 441R A
441	0306	0357	441R	A		034013 E117.5		442	0424 0606 442R A
442	0456	0544	442R	A		052729 E070.7		443	0610 0745 443A A
443	0643	0732	443A	A		071446 E063.8		444	0749 0932 444A B
444	0830	0919*	444A	B		090202 E037.0		445	0936 1119 445A A
445	1018	1106	445A	A		104919 E010.2		446	1122 1305 446A B
446	1205	1253	446A	B		123636 W016.6		447	1307 1449 447A A
447	1352	1441	447A	A	1E	142352 W043.4		448	1451 1632 448A B
448	1539	1628	448A	B	1N1W	161109 W070.3		449	1635 1816 449A A
449	1727	1815	449A	A		175925 W097.1		450	1828 2001 450A B
450	1914	2000	450A	B		194542 W123.9		451	2005 2151 451A A
451	2101	2151	451A	A		213259 W150.7			
452						232015 W177.5			

*6.7 CHANNEL ON-OFF DIFFERENCE
444 0830 0919 NO DATA

NIGHTTIME THIR					DESC. NODE				
					NEWS - SCR - ITPR				
439	0037	0121	442R	B	005912 W022.3	0038 0229 442R B			
440	0210	0229	442R	B	024629 W049.1	0225 0410 441R A			
440	0224	0308	441R	A		0425 0606 442R A			
441	0357	0416	441R	A	043345 W075.9	0610 0745 443A A			
441	0425	0456	442R	A		0746 0932 444A B			
442	0510	0643*	443A	A	062192 W102.7	0932 1119 445A A			
443	0732	0744	443A	A	080019 W129.5	1118 1306 446A B			
443	0746	0830*	444A	B		1306 1449 447A A			
444	0919	0931*	444A	B	095535 W156.4	1449 1632 448A B			
444	0932	1010	445A	A		1633 1817 449A A			
445	1106	1118	445A	A	114252 E176.6	1817 2001 450A B			
445	1118	1205	446A	B		2001 2151 451A A			
446	1253	1305	446A	B	133000 E150.0	2359 0147 455R B			
446	1306	1352	447A	A	1E				
447	1441	1449	447A	A	1E	151725 E123.2			
447	1449	1539	448A	B	1S1W				
448	1633	1727	449A	A		170441 E096.4			
449	1817	1914	450A	B		185158 E069.5			
450	2003	2101	451A	A		203915 E042.7			
451						222631 E015.9			
452	2359	0036	455R	B		001348 W010.9			

*6.7 CHANNEL ON-OFF DIFFERENCE
442 0544 0604 442R A
442 0610 0643 443A A
443 0746 0830 NO DATA
444 0919 0931 NO DATA

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
14 JANUARY 1973

THIR										ESMR									
		11.5 + 6.7		INT	H	THIR	ASC. AND					INT	H						
DATA	ON	OFF		ORBIT	D	GRID	DESC.	MODE		DATA	ON	OFF		ORBIT	D	DESC.	MODE		
ORBIT	HRMN	HRMN	STDM	S	R	CORR	TIME	LONG	HRMNSS	ORBIT	HRMN	HRMN	STDM	S	R	TIME	LONG	HRMNSS	DEG
DAYTIME THIR										ASC. NODE									
453	0036	0124	455R	B			010732	E155.7		453	2350	0147	455R	B					
454							025448	E128.9		455	0324	0518	455R	A					
455	0410	0459	455R	A			044205	E102.0		456	0526	0706	456R	A					
456	0550	0646	456R	A			062921	E075.2		457	0710	0848	457A	B					
457	0745	0833	457A	B			081638	E040.4		458	0851	1033	458A	A					
458	0932	1021	458A	A			100355	E021.6		459	1138	1219	459A	B					
459	1119	1200	459A	B			115111	M005.2		460	1223	1404	460A	A					
460	1307	1355	460A	A			133828	M032.1		461	1407	1540	461A	B					
461	1454	1543	461A	B			152544	M058.9		462	1551	1732	462A	A					
462	1641	1729	462A	A			171301	M085.7		463	1736	1917	463A	B					
463	1829	1916	463A	B			190017	M112.5		464	1921	2104	464A	A					
464	2016	2103	464A	A			204734	M139.4		465	2107	2250	465A	B					
465	2203	2249	465A	B			223451	M166.2											
NIGHTTIME THIR										DESC. NODE									
453	0124	0147	455R	B			020104	M037.7		NEWS - SCR - ITPR									
454	0326	0410	455R	A			034021	M064.5		0326	0518	455R	A						
455	0459	0520	455R	A			053537	M091.3		0527	0706	456R	A						
456	0527	0558	456R	A						0708	0848	457A	B						
457	0646	0706	456R	A			072254	M110.2		0847	1033	458A	A						
458	0707	0745	457A	B						1033	1219	459A	B						
459	0833	0847	457A	B			091011	M145.0		1218	1404	460A	A						
460	0847	0932	458A	A						1405	1540	461A	B						
461	1021	1032	458A	A			105727	M171.8		1549	1732	462A	A						
462	1033	1119	459A	B						1731	1917	463A	B						
463	1200	1210	459A	B			124444	E161.4		1917	2104	464A	A						
464	1210	1307	460A	A						2105	2251	465A	B						
465	1355	1403	460A	A			143200	E134.5											
466	1405	1454	461A	B															
467	1549	1641	462A	A			161917	E107.7											
468	1732	1829	463A	B			180633	E080.9											
469	1917	2016	464A	A			195350	E054.1											
470	2105	2203	465A	B			214106	E027.3											
471							232023	E000.4											

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
15 JANUARY 1973

THIR										ESMR				
DATA ORBIT	11.5 + 6.7		INT ORBIT	H	THIR	ASC. AND		DESC. MODE	TIME LONG	DATA ORBIT	ON OFF		INT ORBIT	H
	ON	OFF	+	R	GRID	HRMNSS	DEC				HRMN	HR	+	R
	HRMN	HRMN	STDM	S	LALO								STDM	S
DAYTIME THIR										ASC. MODE				
466						002207	E167.0			467	0053	0243	468R	A
467	0130	3226	468R	A		020924	E140.2			468	0240	0433	468R	B
468	0325	0414	468R	B		035640	E113.4			469	0440	0622	469R	B
469	0512	0601	469R	B		054357	E086.6			470	0626	0803	470A	A
470	0659	0748	470A	A		073114	E059.7			471	0805	0949	471A	B
471	0847	0935	471A	B	1N	091830	E032.9			472	0940	1136	472A	A
472	1034	1123	472A	A		110547	E006.1			473	1139	1320	473A	B
473	1221	1310	473A	B		125303	M020.8			474	1323	1505	474A	A
474	1409	1457	474A	A		144020	M047.6			475	1507	1648	475A	B
475	1556	1644	475A	B		162736	M074.4			476	1651	1832	476A	A
476	1743	1831	476A	A		181453	M101.2			477	1836	2019	477A	B
477	1930	2018	477A	B		200210	M120.0			478	2022	2210	478A	A
478	2118	2206	478A	A		214926	M154.9			479	2208	0009	482R	B
479	2305	2354	482R	B		233643	E178.3							
NIGHTTIME THIR										DESC. MODE				
466	0054	0130	468R	A		011540	M026.4			NEMS - SCR - ITPR				
467	0226	0243	468R	A		030256	M053.2			0054	0243	468R	A	
467	0241	0325	468R	B						0241	0433	468R	B	
468	0414	0433	468R	P		045013	M080.0			0439	0622	469R	B	
468	0441	0512	469R	B	4N					0623	0803	470A	A	
469	0601	0621	469R	B		063729	M106.0			0804	0949	471A	B	
469	0623	0659	470A	A						0949	1134	472A	A	
470	0740	0803	470A	B		082446	M133.7			1134	1320	473A	B	
470	0804	0847	471A	B	1S					1321	1505	474A	A	
471	0935	0948	471A	B	1S	101202	M160.5			1515	1648	475A	B	
471	0949	1034	472A	A						1649	1832	476A	A	
472	1123	1133	472A	A		115419	E172.7			1832	2013	477A	B	
472	1134	1221	473A	B						2018	2208	478A	A	
473	1310	1319	473A	B		134636	E145.9			2209	0009	481R	B	
473	1321	1409	474A	A										
474	1457	1504	474A	A		153352	E119.0							
474	1505	1556	475A	B										
475	1649	1743	476A	A		172109	E092.2							
476	1833	1930	477A	B		190625	E065.4							
477	2019	2110	478A	A		205542	E038.6							
478	2209	2305	482R	B		224258	E011.0							
479	2354	0009	482R	B		003015	M015.0							

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
16 JANUARY 1973

THIR										ESMR									
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		11.5 + 6.7		INT	H	THIR	ASC. AND							INT	H				
DATA	ON	OFF	ORBIT	D	GRID	DESC. NODE	TIME	LONG		DATA	ON	OFF	ORBIT	D	R				
ORBIT	HRMN	HRMN	+ STDN	R	CORR		HRMNSS	DEC		ORBIT	HRMN	HRMN	+ STDN	R	S				
DAYTIME THIR										ASC. NODE									
480							012359	E151.5		481	0155	0351	481R	A					
481	0240	0328	481R	A			031116	E124.7		482	0357	0532	482R	A					
482	0427	0516	482R	A			045832	E997.9		483	0541	0718	483A	A					
483	0614	0703	483A	A			064549	E071.1		484	0720	0904	484A	B					
484	0801	0850	484A	B	3N		083306	E044.2		485	0908	1049	485A	A					
485	0949	1037	485A	A			102022	E017.4		486	1054	1235	486A	B					
486	1136	1225	486A	B			120739	W009.4		487	1239	1419	487A	A					
487	1323	1412	487A	A			135455	W036.2		488	1423	1605	488A	B					
488	1511	1559	488A	B			154212	W063.0		489	1607	1750	489A	A					
489	1658	1746	489A	A			172928	W089.9		490	1752	1935	490A	B					
490	1845	1934	490A	B			191645	W116.7		491	1937	2121	491A	A					
491	2032	2120	491A	A			210402	W143.5		492	2123	2309	492A	B					
492	2220	2308	492A	B			225118	W178.3											
NIGHTTIME THIR										DESC. NODE									
480	0156	0240	481R	A			021732	W041.9		NEMS - SCR - ITPR									
481	0320	0350	481R	A			040448	W060.7		0156	0351	481R	A						
481	0358	0427	482R	A						0356	0532	482R	A						
482	0516	0534	482R	A			055205	W095.5		0540	0718	483A	A						
482	0541	0614	483A	A						0719	0905	484A	B						
483	0703	0713	483A	A			073421	W122.3		0904	1049	485A	A						
483	0720	0801	484A	B	3S					1049	1236	486A	B						
484	0850	0904	484A	B	3S		092638	W149.2		1235	1419	487A	A						
484	0904	0949	485A	A						1419	1605	488A	B						
485	1037	1048	485A	A			111354	W175.0		1605	1750	489A	A						
485	1049	1136	486A	B						1750	1935	490A	B						
486	1225	1235	486A	B			130111	E157.2		1935	2121	491A	A						
486	1236	1323	487A	A						2120	2309	492A	B						
487	1412	1419	487A	A			144028	E130.4											
487	1420	1511	488A	B															
488	1559	1605	488A	B			163544	E103.6											
488	1611	1658*	489A	A															
489	1750	1845	490A	B			182301	E076.8											
490	1935	2032	491A	A			201017	E049.9											
491	2121	2200	492A	B			215734	E023.1											
492							234450	W003.7											

*6.7 CHANNEL ON-OFF DIFFERENCE
488 1603 1658 489A A

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
17 JANUARY 1973

THIR										ESMR									
		11.5 + 6.7		INT	M	THIR	ASC. AND					INT		M					
DATA	ON	OFF		ORBIT	D	GRID	DESC.	MODE		DATA	ON	OFF	ORBIT	D					
ORBIT	HRMN	HRMN	STON	S	LALO	CORR	TIME	LONG	DEC	ORBIT	HRMN	HRMN	STON	S					
DAYTIME THIR										ASC. NODE									
493							003635	E162.9		494	0111	0301	495R	A					
494	0154	0243	495R	A			022551	E136.1		495	0258	0446	495R	B					
495	0342	0430	495R	B			041308	E189.2		496	0457	0639	496R	B					
496	0529	0617	496R	B			060025	E082.4		497	0643	0819	497A	A					
497	0716	0805	497A	A			074741	E055.6		498	0822	1004	498A	B					
498	0903	0952	498A	B	1S1E		093458	E020.8		499	1049	1150	499A	A					
499	1051	1139	499A	A			112214	E082.8		500	1155	1336	500A	B					
500	1238	1327	500A	B			130931	M624.9		501	1339	1521	501A	A					
501	1425	1514	501A	A	1E		145647	M051.7		502	1523	1705	502A	B					
502	1613	1701	502A	B			164484	M078.5		503	1707	1847	503A	A					
503	1800	1847	503A	A			183121	M105.3		504	1852	2037	504A	B					
504	1947	2035	504A	B	1M		201837	M132.1		505	2038	2224	505A	A					
505	2134	2223	505A	A			220554	M159.8		506	2225	0023	506R	B					
506	2322	0010	506R	B			235310	E174.2											
NIGHTTIME THIR										DESC. NODE									
493	0111	0154	495R	A			013207	M030.5		0111	0301	495R	A						
494	0243	0301	495R	A			031924	M057.3		0257	0446	495R	B						
494	0257	0342	495R	B						0457	0639	496R	B						
495	0438	0449	495R	B			050648	M084.2		0639	0819	497A	A						
495	0457	0529	496R	B						0818	1004	498A	B						
496	0617	0630*	496R	B			065357	M111.8		1004	1150	499A	A						
496	0639	0716	497A	A						1150	1336	500A	B						
497	0805	0817	497A	A			084113	M137.8		1335	1521	501A	A						
497	0818	0903	498A	B	1N1M					1520	1705	502A	B						
498	0952	1000	498A	B	1N1M		102833	M164.6		1705	1847	503A	A						
498	1004	1051	499A	A						1846	2037	504A	B						
499	1139	1149	499A	A			121546	E168.6		2035	2225	505A	A						
499	1150	1236	500A	B						2225	0023	506R	B						
500	1327	1336	500A	B			140303	E141.8											
500	1335	1425	501A	A	1M														
501	1521	1613	502A	B			155019	E114.9											
502	1705	1800	503A	A			173736	E088.1											
503	1848	1947	504A	B	1S		192453	E061.3											
504	2036	2134	505A	A			211209	E034.5											
505	2225	2322	506R	B			225926	E007.7											
506	0010	0022	506R	B			004642	M019.2											

*6.7 CHANNEL ON-OFF DIFFERENCE
496 0617 0637 496R B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
18 JANUARY 1973

THIR										ESMR				
-----										-----				
		11.5 + 6.7		INT	H	THIR	ASC. AND					INT	H	
DATA	ON	OFF	ORBIT	R	GRID	DESC.	NODE	TIME	LONG	DATA	ON	OFF	ORBIT	R
ORBIT	HRMN	HRMN	STDM	S	LALO	HRMNSS	DEC			ORBIT	HRMN	HRMN	STDM	S
DAYTIME THIR										ASC. NODE				
507						014027	E147.4			508	0211	0437	508R	A
508	0256	0345	508R	A		032743	E120.6			509	0415	0553	509R	A
509	0443	0532	509R	A		051500	E093.8			510	0559	0735	510A	A
510	0631	0719	510A	A		070217	E066.9			511	0736	0922	511A	B
511	0810	0907	511A	B		084933	E040.1			512	0924	1107	512A	A
512	1005	1054	512A	A		103656	E013.3			513	1110	1254	513A	B
513	1153	1241	513A	B		122406	W013.5			514	1255	1430	514A	A
514	1340	1420	514A	A		141123	W040.3			515	1439	1622	515A	B
515	1527	1616	515A	B		155040	W067.2			516	1623	1806	516A	A
516	1714	1803	516A	A		174556	W094.0			517	1800	1950	517A	B
517	1902	1949	517A	B		193313	W120.8			518	1953	2137	518A	A
518	2049	2136	518A	A		212029	W147.6							
519						230746	W174.4							
NIGHTTIME THIR										DESC. NODE				
507	0211	0256	508R	A		023359	W046.0			NEMS - SCR - ITPR				
508	0345	0404	508R	A		042115	W011.4			0211	0407	508R	A	
509	0414	0443	509R	A						0414	0554	509R	A	
509	0532	0553	509R	A		060032	W099.6			0550	0735	510A	A	
509	0559	0631	510A	A						0734	0922	511A	B	
510	0719	0734	510A	A		075549	W126.4			0921	1107	512A	A	
510	0734	0810	511A	B						1115	1253	513A	B	
511	0907	0921	511A	B		094305	W153.3			1251	1437	514A	A	
511	0921	1005	512A	A						1436	1622	515A	B	
512	1054	1106	512A	A		113022	E179.9			1621	1806	516A	A	
512	1105	1153	513A	B						1759	1949	517A	B	
513	1241	1252	513A	B		131730	E153.1			1949	2137	518A	A	
513	1251	1340	514A	A										
514	1420	1436	514A	A		150455	E126.3							
514	1436	1527	515A	B										
515	1622	1714	516A	A		165211	E099.5							
516	1806	1902	517A	B		183720	E072.7							
517	1950	2049	518A	A		202645	E045.0							
518						221401	E019.0							
519						000110	W087.0							

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
19 JANUARY 1973

THIR								ESIR					
DATA	11.5	6.7	INT	H	THIR	ASC. AND				INT	H		
ORBIT	ON	OFF	ORBIT	D	GRID	DESC. MODE				ORBIT	D		
	HRMN	HRMN	+	R	CORR	TIME LONG				+	R		
			STDN	S	LALC	HRMNSS DEG				STDN	S		
DAYTIME THIR								ASC. MODE					
520						005502 E150.8		521	0125	0315	522R	A	
521	0211	0259	522R	A	1N	024219 E131.9		522	0313	0438	522R	B	
522	0358	0447	522R	B	1N1E	042936 E105.1		523	0510	0655	523R	B	
523	0545	0634	523R	B		061652 E070.3		524	0655	0837	524A	A	
524	0733	0821	524A	A		080409 E051.5		525	0835	1024	525A	B	
525	0920	1009	525A	B		095125 E024.7		526	1021	1210	526A	A	
526	1107	1156	526A	A		113842 W002.2		527	1206	1355	527A	B	
527	1254	1343	527A	B		132558 W029.0		528	1355	1539	528A	A	
528	1442	1530	528A	A		151315 W055.0		529	1538	1723	529A	B	
529	1629	1718	529A	B		170032 W002.6		530	1721	1906	530A	A	
530	1816	1903	530A	A		184748 W109.4		531	1904	2054	531A	B	
531	2004	2052	531A	B		203505 W136.3		532	2052	2240	532A	A	
532	2151	2239	532A	A		222221 W163.1							
NIGHTTIME THIR								DESC. MODE					
520	0125	0211	522R	A	1S	014834 W034.6		521	0259	0315	522R	A	
521	0259	0315	522R	A	1S	033551 W061.5		522	0314	0358	522R	B	
522	0314	0358	522R	B	1S1W			523	0447	0507	522R	B	
523	0447	0507	522R	B	1S1.	052307 W000.3		524	0514	0545	523R	B	
524	0514	0545	523R	B				525	0634	0656	523R	B	
525	0634	0656	523R	B		071024 W115.1		526	0655	0733	524A	A	
526	0655	0733	524A	A				527	0821	0836	524A	A	
527	0821	0836	524A	A		085741 W141.9		528	0836	0920	525A	B	
528	0836	0920	525A	B				529	1009	1023	525A	B	
529	1009	1023	525A	B		104457 W168.7		530	1021	1107	526A	A	
530	1021	1107	526A	A				531	1156	1209	526A	A	
531	1156	1209	526A	A		123214 E164.5		532	1206	1254	527A	B	
532	1206	1254	527A	B				533	1343	1354	527A	B	
533	1343	1354	527A	B		141930 E137.6		534	1355	1442	528A	A	
534	1355	1442	528A	A				535	1530	1538	528A	A	
535	1530	1538	528A	A		160647 E110.0		536	1538	1629	529A	B	
536	1538	1629	529A	B				537	1722	1816	530A	A	
537	1722	1816	530A	A		175403 E004.0		538	1905	2004	531A	B	
538	1905	2004	531A	B		194120 E057.2		539	2053	2151	532A	A	
539	2053	2151	532A	A		212037 E030.4		540	2241	2338	533R	B	
540	2241	2338	533R	B		231553 E003.5							
								NEMS - SCR - ITPR					
								0125	0315	522R	B		
								0313	0508	522R	A		
								0513	0657	523R	B		
								0655	0837	524A	A		
								0835	1024	525A	B		
								1021	1210	526A	A		
								1206	1355	527A	B		
								1355	1539	528A	A		
								1538	1722	529A	B		
								1722	1906	530A	A		
								1905	2054	531A	B		
								2053	2240	532A	A		
								2241	0040	533R	B		

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
20 JANUARY 1973

THIR										ESMR									
-----										-----									
11.5 + 6.7			INT	H	THIR	ASC. AND							INT	H					
DATA	ON	OFF	ORBIT	D	GRID	DESC. MODE							ORBIT	D					
ORBIT	HRMN	HRMN	STDN	R	CORR	TIME	LONG						ORBIT	HRMN	HRMN	STDN	R		
				S	LALO	HRMNSS	DEG										S		

DAYTIME THIR					ASC. NODE	
533	0338	0027	535R	B	000938	E170.1
534					015654	E143.3
535	0313	0401	535R	A	034411	E116.5
536	0500	0547	536R	A	053128	E089.7
537	0647	0736	537A	A	071644	E062.8
538	0835	0923	538A	A	090601	E036.8
539	1022	1110	539A	B	105317	E009.2
540	1209	1258	540A	A	124034	W017.6
541	1356	1445	541A	B	1E 142750	W044.5
542	1544	1632	542A	A	1E 161507	W071.3
543	1731	1820	543A	B	180224	W098.1
544					194940	W124.9
545	2106	2153	545A	B	213657	W151.7
546					232413	W170.5

*6.7 CHANNEL ON-OFF DIFFERENCE
544 1918 2004 544A A

NIGHTTIME THIR					DESC. NODE	
533	0027	0040	535R	B	010310	W023.3
534	0230	0313	535R	A	025026	W050.1
535	0401	0422	535R	A	043743	W076.9
536	0428	0500	536R	A		
536	0540	0611	536R	A	062459	W103.7
536	0612	0647	537A	A		
537	0736	0750	537A	A	081216	W130.6
537	0750	0835	538A	A		
538	0923	0936	538A	A	095932	W157.4
539	0935	1022	539A	B		
539	1110	1122	539A	B	114649	E175.8
539	1121	1209	540A	A		
540	1258	1309	540A	A	133406	E149.8
540	1308	1356	541A	B	1W	
541	1445	1452	541A	B	1W 152122	E122.2
541	1452	1544	542A	A	1W	
542	1632	1638	542A	A	1W 170839	E095.4
542	1637	1731	543A	B		
543					185555	E063.5
544	2007	2106	545A	B	204312	E041.7
545					223029	E014.9
546					001745	W011.9

*6.7 CHANNEL ON-OFF DIFFERENCE

542 1632 1638 NO DATA
543 1822 1918 544A A

NEMS - SCR - ITPR		
0230	0422	535R A
0428	0612	536R A
0611	0751	537A B
0750	0937	538A A
0935	1123	539A B
1122	1310	540A A
1308	1453	541A B
1452	1638	542A A
1637	1822	543A B
1822	2005	544A A
2004	2154	545A B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
21 JANUARY 1973

THIR							ESMR						
-----							-----						
DATA	11.5	6.7	INT	M	THIR	ASC. AND	DATA	ON	OFF	INT	M		
ORBIT	HRMN	HRMN	ORBIT	D	GRID	DESC. MODE	ORBIT	HRMN	HRMN	ORBIT	D		
			+	R	CORR	TIME LONG				+	R		
			STDN	S	LALO	HRMNS DEC				STDN	S		
DAYTIME THIR							ASC. NODE						
547							011130	E154.6					
548	0227	0316	549R	A			025847	E127.8					
549	0415	0503	549R	B	1S		044603	E101.0					
550	0602	0651	550R	B			063320	E074.2					
551	0749	0838	551A	A			082036	E047.4					
552	0936	1025	552A	B	1N1E		100753	E020.5					
553	1124	1212	553A	A			115509	W006.3					
554	1311	1400	554A	B			134226	W033.1					
555	1458	1547	555A	A			152943	W059.9					
556	1646	1734	556A	B			171659	W086.7					
557	1833	1920	557A	A			190416	W113.6					
558	2020	2106	558A	B			205132	W140.4					
559	2207	2254	559A	A			223849	W167.2					
NIGHTTIME THIR							DESC. NODE						
547	0143	0227	549R	A			020502	W038.7					
548	0316	0329	549R	A			035218	W065.6					
548	0331	0415	549R	B	1N								
549	0503	0524	549R	B	1N		053935	W092.4					
549	0531	0602	550R	B									
550	0651	0711	550R	B			072651	W119.2					
550	0712	0749	551A	A									
551	0838	0852	551A	A			091408	W146.0					
551	0852	0936	552A	B	1S1W								
552	1025	1038	552A	B	1S1W		110124	W172.8					
552	1038	1124	553A	A									
553	1212	1224	553A	A			124841	E160.3					
553	1223	1311	554A	B									
554	1400	1467*	554A	B			143558	E133.5					
554	1407	1458*	555A	A									
555	1552	1646	556A	B			162314	E106.7					
556	1738	1833	557A	A			181031	E079.9					
557	1922	2020	558A	B			195747	E053.1					
558	2109	2207	559A	A			214504	E026.3					
559	2258	2355	562R	B			233220	W000.6					
NEWS - SCR - ITPR							-----						
0143	0330		549R	A									
0331	0525		549R	B									
0530	0712		550R	B									
0712	0852		551A	A									
0852	1039		552A	B									
1038	1224		553A	A									
1223	1408		554A	B									
1407	1553		555A	A									
1552	1739		556A	B									
1738	1921		557A	A									
1920	2106		558A	B									
2106	2254		559A	A									
2258	0058		562R	P									

*6.7 CHANNEL ON-OFF DIFFERENCE
544 1425 1458 55'A A

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
22 JANUARY 1973

THIR										THIR									
-----										-----									
DATA	.5 + 6.7	INT	H	THIR	ASC. AND	DESC. NODE	TIME	LONG		DATA	ON	OFF	INT	H	THIR	ASC. AND	DESC. NODE	TIME	LONG
ORBIT	HRMN	HRMN	STDN	S	LALO	HRMNSS	DEG			ORBIT	HRMN	HRMN	STDN	S	LALO	HRMNSS	DEG		
DAYTIME THIR										ASC. NODE									
560	2355	0043	562R	B		002605	E166.0			560	2258	0058	562R	A		002605	E166.0		
561						021322	E139.2			562	0245	0435	562R	B		021322	E139.2		
562	0329	0418	562R	A		040039	E112.4			563	0445	0628	563R	A		040039	E112.4		
563	0517	0605	563R	A		054755	E085.5			564	0628	0806	564A	B		054755	E085.5		
564	0704	0752	564A	B		073512	E058.7			565	0807	0954	565A	A		073512	E058.7		
565	0851	0940	565A	A		092228	E031.9			566	0951	1140	566A	B		092228	E031.9		
566	1038	1127	566A	B	2N1E	110945	E005.1			567	1138	1326	567A	A		110945	E005.1		
567	1226	1314	567A	B		125.01	W021.7			568	1325	1509	568A	B		125.01	W021.7		
568	1413	1502	568A	B		144418	W048.6			569	1509	1653	569A	A		144418	W048.6		
569	1600	1649	569A	A	1N	163135	W075.4			570	1652	1836	570A	B		163135	W075.4		
570	1748	1836	570A	B		181851	W102.2			571	1835	2023	571A	A		181851	W102.2		
571	1935	2022	571A	A		200608	W129.0			572	2022	2209	572A	B		200608	W129.0		
572	2122	2207	572A	B	1N	215324	W155.8									215324	W155.8		
573						234041	E177.3									234041	E177.3		
NIGHTTIME THIR										DESC. NODE									
560	0043	0057	562R	B		011937	W027.4			560	0245	0435	562R	A		011937	W027.4		
561	0245	0329	562R	A		030054	W054.2			562	0445	0628	563R	A		030054	W054.2		
562	0418	0438	562R	A		045410	W081.0			563	0628	0806	564A	B		045410	W081.0		
562	0444	0517	563R	A						564	0807	0954	565A	A					
563	0605	0627	563R	A		064127	W107.9			565	0951	1140	566A	B		064127	W107.9		
563	0627	0704	564A	B						566	1138	1326	567A	A					
564	0752	0806	564A	B		082843	W134.7			567	1325	1509	568A	B		082843	W134.7		
564	0807	0851	565A	A						568	1509	1653	569A	A					
565	0940	0953	565A	A		101560	W161.4			569	1653	1836	570A	B		101560	W161.4		
565	0951	1038*	566A	B	2S1W	120316	E171.7			570	1835	2022	571A	A		120316	E171.7		
566	1127	1139	566A	B	2S1W					571	2022	2209	572A	B					
566	1138	1226	567A	B		135033	E144.9									135033	E144.9		
567	1314	1325	567A	B															
567	1325	1413	568A	B		150750	E118.1									150750	E118.1		
568	1502	1508	568A	B															
568	1510	1600	569A	A	1S														
569	1653	1748	570A	B		172506	E091.2									172506	E091.2		
570	1836	1935	571A	A		191223	E064.2									191223	E064.2		
571	2023	2122	572A	B	1S	205939	E037.6									205939	E037.6		
572						224656	E010.8									224656	E010.8		
573	0015	0057	576R	A		003412	W016.0									003412	W016.0		

*6.7 CHANNEL ON-OFF DIFFERENCE
565 0958 1038 566A B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
23 JANUARY 1973

THIR							ESMR						
DATA	11.5	6.7	INT	H	THIR	ASC. AND	DATA	ON	OFF	INT	H		
ORBIT	ON	OFF	ORBIT	D	GRID	DESC. NODE	ORBIT	HRMN	HRMN	ORBIT	D		
	HRMN	HRMN	STDN	R	CORR	TIME LONG				STDN	R		
				S	LALO	HRMNSS DEG					S		
DAYTIME THIR							ASC. NODE						
574	0057	0145	576R	A		012757 E150.5	574	0014	0208	576R	A		
575	0244	0333	575R	B		031514 E123.7	575	0159	0357	575R	B		
576	0431	0520	576R	B	1N	050231 E096.9	576	0402	0541	576R	B		
577	0618	0737	577A	B	2N	064947 E070.1	577	0546	0721	577A	B		
578	0806	0854	578A	A		083704 E043.3	578	0721	0910	578A	A		
579	0953	1042	579A	A		102420 E016.4	579	0908	1055	579A	B		
580	1140	1229	580A	A		121137 W010.4	580	1056	1243	580A	A		
581	1328	1416	581A	B	2N	135854 W037.2	581	1242	1424	581A	B		
582	1515	1604	582A	A		154610 W064.0	582	1424	1610	582A	A		
583	1702	1751	583A	B		173327 W090.9	583	1610	1755	583A	B		
584	1849	1935	584A	A		192043 W117.7	584	1754	1936	584A	A		
585	2037	2123	585A	B	1E	210760 W144.5	585	1938	2124	585A	B		
586	2224	2303*	586A	A	2N	225516 W171.3	586	2125	2312	586A	A		
*6.7 CHANNEL ON-OFF DIFFERENCE													
586	2224	2311	586A	A									
NIGHTTIME THIR							DESC. NODE						
574	0145	0207	576R	A		022129 W042.9	NEMS - SCR - ITPR						
574	0159	0244	575R	B			0014	0207	576R	A			
575	0333	0356	575R	B		040846 W069.7	0159	0356	575R	B			
575	0402	0431	576R	B	1S		0402	0541	576R	B			
576	0520	0540	576R	B	1S	055602 W096.5	0546	0721	577A	B			
576	0549	0618	577A	B	2S		0721	0909	578A	A			
577	0707	0720	577A	B	2S	074319 W123.3	0908	1054	579A	B			
577	0721	0806	578A	A			1053	1243	580A	A			
578	0854	0908	578A	A		093035 W150.1	1242	1424	581A	B			
578	0908	0953	579A	A			1424	1610	582A	A			
579	1042	1053	579A	A		111752 W177.0	1610	1754	583A	B			
579	1053	1140	580A	A			1754	1936	584A	A			
580	1229	1242	580A	A		131508 E106.2	1935	2123	585A	B			
580	1242	1328	581A	B	2S		2125	2312	586A	A			
581	1416	1423	581A	B	2S	145225 E129.4	2313	0113	589R	A			
581	1424	1515	582A	A									
582	1610	1702	583A	B		163941 E102.6							
583	1754	1849	584A	A		182658 E075.8							
584	1938	2037	585A	B	1W	201415 E049.0							
585	2125	2224	586A	A	2N	220131 E022.1							
586	2314	0011	589R	B		234848 W004.7							

TABLE 2-2
DATA AVAILABILITY ON-OFF TIME
24 JANUARY 1973

THIR										ESMR				
DATA ORBIT	11.5 + 6.7		INT ORBIT + STDN	H D R S	THIR GRID CORR LALO	ASC. AND DESC. NODE		DATA ORBIT	ON HRMN	OFF HRMN	INT ORBIT + STDN	H D R S		
	ON HRMN	OFF HRMN				TIME HRMNSS	LONG DEG							
DAYTIME THIR					ASC. NODE									
587	0011	0100	589R	B		004233	E161.9	587	2314	0114	589R	B		
588						022950	E135.1	589	0302	0455	589R	A		
589	0346	0435	589R	A	2N	041706	E108.2	590	0500	0641	590R	A		
590	0533	0622	590R	A	1N1E	060423	E081.4	591	0642	0825	591A	B		
591	0720	0809	591A	B		075139	E054.4	592	0823	1013	592A	A		
592	0908	0956	592A	A		093856	E027.8	593	1012	1159	593A	B		
593	1055	1144	593A	B	1E	112612	E001.0	594	1155	1342	594A	A		
594	1242	1331	594A	A		131329	W025.9	595	1340	1525	595A	B		
595	1430	1518	595A	B	1N	150046	W052.7	596	1526	1709	596A	A		
596	1617	1705	596A	A		164800	W079.5	597	1709	1851	597A	B		
597	1804	1850	597A	B		183519	W106.3	598	1853	2039	598A	A		
598	1951	2038	598A	A		202235	W133.1	599	2040	2226	599A	B		
599	2139	2225	599A	B		220952	W160.0							
600						235708	E173.2							
NIGHTTIME THIR					DESC. NODE					NEMS - SCR - ITPR				
587	0100	0113	589R	B		013604	W031.5		0302	0454	589R	B		
588	0302	0346	589R	A	2S	032321	W058.3		0500	0643	590R	A		
589	0435	0454	589R	A	2S	051037	W085.1		0643	0826	591A	B		
589	0500	0533	590R	A	1S1W				0823	1013	592A	A		
590	0622	0643	590R	A	1S1W	065754	W112.0		1012	1158	593A	B		
590	0643	0720	591A	B					1154	1343	594A	A		
591	0809	0825	591A	B		084511	W138.8		1340	1525	595A	B		
591	0823	0908	592A	A					1526	1709	596A	A		
592	0956	1012	592A	A		103227	W165.6		1709	1851	597A	B		
592	1012	1055	593A	B	1W				1851	2039	598A	A		
593	1144	1157	593A	B	1W	121944	E167.6		2037	2226	599A	B		
593	1154	1242	594A	A										
594	1331	1342	594A	A		140700	E140.8							
594	1340	1430*	595A	B	1S									
595	1518	1525	595A	B	1S	155417	E113.9							
595	1526	1617	596A	A										
596	1709	1804	597A	B		174133	E087.1							
597	1853	1951	598A	A		192850	E060.3							
598	2040	2139	599A	B		211607	E033.5							
599						230323	E006.7							
600	0029	0113	602R	A		005040	W020.2							

*6.7 CHANNEL ON-OFF DIFFERENCE
594 1400 1430 595A B

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
25 JANUARY 1973

THIR										ESMR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND			DATA		ON OFF		INT	H	DESC. AND			
ORBIT	HRMN	HRMN	STDN	ORBIT	D	GRID	TIME	LONG		ORBIT	HRMN	HRMN	STDN	ORBIT	D	TIME	LONG		
					R	CORR	HRMNSS	DEG							R				
					S	LALO									S				
DAYTIME THIR										ASC. NODE									
601	0113	0202		602R	A		014425	E146.4		601	0029	0221		603R	A				
602	0300	0349		602R	B		033142	E119.6		602	0216	0412		602R	B				
603	0448	0536		603R	B		051858	E092.8		603	0417	0558		603R	B				
604	0635	0724		604A	A	3N	070615	E066.0		604	0559	0740		604A	A				
605	0822	0911		605A	B		085331	E039.1		605	0739	0926		605A	B				
606	1010	1058		606A	A		104048	E012.3		606	0926	1111		606A	A				
607	1157	1246		607A	B		122804	W014.5		607	1110	1256		607A	B				
608	1344	1433		608A	A		141521	W041.3		608	1256	1438		608A	A				
609	1531	1620		609A	B		160238	W068.0		609	1440	1625		609A	B				
610	1719	1807		610A	A	1N	174954	W095.0		610	1624	1809		610A	A				
611	1906	1952		611A	B		193711	W121.8		611	1810	1953		611A	B				
612	2053	2142		612A	A		212427	W148.6		612	1954	2139		612A	A				
613	2241	2329		616R	B		231146	W175.4		613	2133	2314		616R	B				
NIGHTTIME THIR										DESC. NODE									
601	0202	0221		602R	A		023756	W047.0		601	0029	0221		602R	A				
602	0216	0300		602R	B		042513	W073.8		602	0216	0412		602R	B				
603	0349	0411		602R	B		061229	W100.6		603	0417	0558		603R	B				
604	0417	0448		603R	B		075946	W127.4		604	0559	0739		604A	A				
605	0536	0557		603R	B		094702	W154.3		605	0739	0926		605A	B				
606	0559	0635		604A	A	3S	113419	E178.9		606	0926	1111		606A	A				
607	0724	0739		604A	A	3S	132136	E152.1		607	1110	1256		607A	B				
608	0739	0822		605A	B		150852	E125.3		608	1256	1438		608A	A				
609	0911	0925		605A	B		165609	E098.5		609	1439	1625		609A	B				
610	0926	1010		606A	A		184325	E071.7		610	1624	1809		610A	A				
611	1058	1110		606A	A		203042	E044.8		611	1807	1953		611A	B				
612	1111	1157		607A	B		221758	E018.0		612	1953	2139		612A	A				
613	1246	1255		607A	B		000515	W008.8		613	2143	2343		616R	B				
614	1256	1344		608A	A														
615	1439	1531		609A	B														
616	1624	1719		610A	A	1S													
617	1807	1906		611A	B														
618	1955	2053		612A	A														
619	2144	2241		616R	B														
620	2329	2343		616R	B														

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
26 JANUARY 1973

THIR										ESMR									
DATA		11.5 + 6.7		INT	M	THIR	ASC. AND	DESC. NODE		DATA		ON	OFF	INT	M	THIR	ASC. AND	DESC. NODE	
ORBIT	HRMN	HRMN	STDN	+	R	CORR	TIME	LONG	DEC	ORBIT	HRMN	HRMN	STDN	+	R	CORR	TIME	LONG	DEC
ORBIT	HRMN	HRMN	STDN	S	LALO	HRMN	HRMN	HRMN	DEC	ORBIT	HRMN	HRMN	STDN	S	LALO	HRMN	HRMN	HRMN	DEC
DAYTIME THIR										ASC. NODE									
614										005930	E157.8								
615										024617	E138.9								
616	0402	0451	616R	A						043334	E104.1								
617	0550	0638	617R	A	1M					062056	E077.3								
618	0737	0826	618A	B	1M					080807	E050.5								
619	0924	1013	619A	A						095523	E023.7								
620	1112	1200	620A	B						114240	E003.2								
621	1259	1347	621A	A						132957	E030.8								
622	1446	1535	622A	B	2M					151713	E056.9								
623	1633	1722	623A	A						170430	E003.6								
624	1821	1909	624A	B						185146	E110.4								
625	2008	2054	625A	A						203903	E137.3								
626	2155	2244	626A	B						222619	E164.1								
NIGHTTIME THIR										DESC. NODE									
614										015232	E035.6								
615	0319	0402	616R	A						033946	E062.4								
616	0451	0511	616R	A						052705	E009.3								
617	0517	0550	617R	A	1S														
617	0638	0659	617R	A	1S					071421	E116.1								
617	0700	0737	618A	B	1E														
618	0826	0839	618A	B	1E					090139	E142.9								
618	0839	0924	619A	A															
619	1013	1026	619A	A						104854	E169.7								
619	1026	1112	620A	B															
620	1200	1211	620A	B						123611	E163.5								
620	1213	1259	621A	A															
621	1347	1350	621A	A						142328	E136.7								
621	1356	1446	622A	B	2S														
622	1535	1541	622A	B	2S					161044	E109.8								
622	1541	1633	623A	B															
623	1723	1821	624A	B						175001	E003.0								
624	1909	2008	625A	A						190517	E056.2								
625	2057	2155	626A	B						213004	E029.4								
626										231950	E002.0								
										NEWS - SCR - ITPR									
										0319	0512	616R	A						
										0517	0700	617R	A						
										0659	0848	618A	B						
										0939	1027	619A	A						
										1026	1212	620A	B						
										1212	1359	621A	A						
										1356	1542	622A	B						
										1541	1724	623A	A						
										1723	1907	624A	B						
										1907	2055	625A	A						
										2054	2245	626A	B						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
27 JANUARY 1973

THIR										ESMR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND			DATA		ON OFF		INT	H	DESC. AND			
ORBIT	HRMN	HRMN	STDN	ORBIT	D	GRID	TIME	LONG		ORBIT	HRMN	HRMN	STDN	ORBIT	D	TIME	LONG		
					R	CORR	HRMNSS	DEC							R				S

DAYTIME THIR

ASC. MODE

627							001336	E169.1	
628	0130	0210	629R	A	1M		020052	E142.3	
629	0317	0406	629R	B			034009	E115.5	
630	0504	0553	630R	B			053526	E000.7	
631	0652	0740	631A	A			072242	E061.0	
632	0839	0928	632A	B			090959	E035.0	
633	1026	1115	633A	A			105715	E000.2	
634	1214	1302	634A	B	2M		124432	M010.6	
635	1401	1450	635A	A			143148	M045.4	
636	1548	1637	636A	B			161905	M072.3	
637	1735	1824	637A	A			180622	M099.1	
638	1923	2009*	638A	B			195338	M125.9	
639	2110	2157	639A	A			214055	M152.7	
640	2257	2346	643R	B			232011	M170.5	

*6.7 CHANNEL ON-OFF DIFFERENCE
638 1923 2004 638A B

NIGHTTIME THIR

DESC. MODE

627	0044	0130	629R	A	1S		010707	M024.3	
628	0210	0256	629R	A	1S		025424	M051.1	
629	0233	0317	629R	B					
629	0406	0427	629R	B			044140	M077.9	
629	0433	0504	630R	B					
630	0553	0614	630R	B			062057	M104.7	
630	0613	0652	631A	A					
631	0740	0754	631A	A			081613	M131.5	
631	0754	0839	632A	B					
632	0928	0939	632A	B			100330	M150.4	
632	0940	1026	633A	A					
633	1115	1127	633A	A			115046	E174.0	
633	1128	1214	634A	B	2S				
634	1302	1311	634A	B	2S		133803	E146.0	
634	1313	1401	635A	A					
635	1450	1457	635A	A			152519	E121.2	
635	1458	1548	636A	B					
636	1641	1735	637A	A			171236	E094.4	
637	1826	1923	638	B			185953	E067.5	
638	2011	2110	639A	A			204709	E040.7	
639	2159	2257	643R	B			223426	E013.9	
640	2346	2350	643R	B			002142	M012.9	

NEWS - SCR - ITPR

0045	0237	629R	B
0233	0427	629R	A
0433	0615	630R	B
0614	0755	631A	A
0754	0941	632A	B
0940	1128	633A	A
1127	1312	634A	B
1312	1450	635A	A
1450	1642	636A	B
1640	1825	637A	A
1826	2011	638A	B
2011	2150	639A	A
2150	2359	643R	B

KEEP IT SIMPLE. THE ORIGINAL CASE.

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TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
29 JANUARY 1973

THIR							ESMR						
DATA	11.5	6.7	INT	H	THIR	ASC. AND	DATA	ON	OFF	INT	H	THIR	ASC. AND
ORBIT	HRMM	HRMM	ORBIT	D	GRID	DESC. NODE	ORBIT	HRMM	HRMM	ORBIT	D	GRID	DESC. NODE
			+	R	CORR	TIME LONG				+	R	CORR	TIME LONG
			STDN	S	LALO	WPMSS DEC				STDN	S	LALO	WPMSS DEC
DAYTIME THIR							ASC. NODE						
654							003003	E165.9					
655	0147	0235	656R	A			021720	E130.2					
656	0334	0422	656R	B			040436	E111.4					
657	0521	0610	657R	B			055153	F084.5					
658	0708	0757	658A	A			073910	E057.7					
659	0856	0944	659A	B	1N		092626	E030.9					
660	1043	1132	660A	A			111343	E084.1					
661	1230	1319	661A	B			130059	W022.7					
662	1417	1506	662A	A			144016	W049.6					
663	1605	1653	663A	A			163532	W076.4					
664	1752	1840	664A	A			182249	W103.2					
665	1939	2026	665A	B			201006	W130.0					
666	2127	2213	666A	A			215722	W156.8					
667	2314	0003	670R	B	1N		234439	E176.4					
NIGHTTIME THIR							DESC. NODE						
654	0102	0147	656R	A			012334	W020.4					
655	0235	0253	656R	A			031051	W055.2					
656	0422	0443	656R	B			045007	W082.0					
657	0610	0632	657R	B			064524	W108.8					
658	0757	0810	658A	A			083241	W135.7					
659	0810	0856	659A	B	1S		101957	W162.5					
660	1132	1142	660A	A			120714	E170.7					
661	1319	1328	661A	B			135430	E143.9					
662	1512	1512	662A	A			154147	E117.1					
663	1656	1752	664A	A			172403	E090.3					
664	1841	1939	665A	B			191620	E063.4					
665	2028	2127	666A	A			210336	E036.6					
666	2215	2314	670R	B	1S		225953	E009.8					
667	0003	0015	670R	B	1S		003919	W017.0					
NEWS - SCR - ITPR							NEWS - SCR - ITPR						
0102	0253	656R	A				0102	0253	656R	A			
0250	0444	656R	B				0250	0444	656R	B			
0449	0632	657R	B				0449	0632	657R	B			
0630	0811	658A	A				0630	0811	658A	A			
0810	0957	659A	B				0810	0957	659A	B			
0956	1143	660A	A				0956	1143	660A	A			
1141	1328	661A	B				1141	1328	661A	B			
1320	1513	662A	A				1320	1513	662A	A			
1512	1656	663A	B				1512	1656	663A	B			
1656	1840	664A	A				1656	1840	664A	A			
1839	2027	665A	B				1839	2027	665A	B			
2026	2214	666A	A				2026	2214	666A	A			
2214	0016	670R	B				2214	0016	670R	B			

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
30 JANUARY 1973

THIR								ESMR							
DATA	11.5	6.7	INT	H	THIR	ASC. AND		DATA	ON	OFF	INT	H			
ORBIT	ON	OFF	ORBIT	D	GRID	DESC. NODE		ORBIT	HRMN	HRMN	ORBIT	D			
	HRMN	HRMN	STDN	R	CORR	TIME LONG					STDN	R			
				S	LALO	HRMNSS DEG						S			
DAYTIME THIR								ASC. NODE							
668						013155 E149.5		669	0203	0401	669R	A			
669	0246	0337	669R	A		031912 E122.7		670	0407	0543	679R	A			
670	0436	0524	670R	A	1E	050628 E095.9		671	0549	0726	671A	A			
671	0623	0712	671A	A		065345 E069.1		672	0726	0912	672A	B			
672						084102 E042.3		673	0912	0958	673A	A			
673	0958	1046	673A	A		102010 E015.6		674	1057	1244	674A	B			
674	1145	1234	674A	B		121535 W011.4		675	1243	1430	675A	A			
675	1332	1421	675A	A		140251 W038.2		676	1428	1614	676A	B			
676	1519	1608	676A	B		155008 W065.1		677	1612	1756	677A	A			
677	1707	1755	677A	A		173724 W091.0		678	1755	1938	678A	B			
678	1854	1938	678A	B		192441 W118.7		679	1948	2131	679A	A			
679	2041	2129	679A	A		211150 W145.5		680	2128	2310	680A	B			
680	2229	2317	680A	B		225914 W172.3									
NIGHTTIME THIR								DESC. NODE							
668	0203	0248	669R	A		022526 W043.8		NEMS - SCR - ITPR							
669	0337	0408	669R	A		041243 W070.7		0203	0401	669R	A				
669	0407	0436	670R	A	1W			0407	0543	670R	A				
670	0524	0543	670R	A	1W	055959 W097.5		0549	0726	671A	A				
670	0549	0623	671A	A				0726	0913	672A	B				
671	0712	0725	671A	A		074716 W124.3		0912	1058	673A	A				
672	0912	0958	673A	A		093432 W151.1		1057	1244	674A	B				
673	1046	1057	673A	A		112149 W177.9		1243	1430	675A	A				
673	1057	1145	674A	B				1428	1615	676A	B				
674	1234	1243	674A	B		130906 E155.2		1612	1756	677A	A				
674	1243	1332	675A	A				1754	1938	678A	B				
675	1421	1429	675A	A		145622 W128.4		1939	2131	679A	A				
675	1428	1519	676A	B				2128	2317	680A	B				
676	1608	1613	676A	B		164339 E101.6									
676	1612	1707	677A	A											
677	1755	1854	678A	B		183055 E074.0									
678	1943	2041	679A	A		201012 E040.0									
679	2130	2229	680A	B		220520 E021.1									
680						235245 W005.7									

**TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
31 JANUARY 1973**

THIR										ESMR									
DATA		11.5 + 6.7		INT	H	THIR	ASC. AND			DATA		ON	OFF	INT	H				
ORBIT	HRMN	HRMN	STDM	ORBIT	D	GRID	DESC. MODE	TIME	LONG	ORBIT	HRMN	HRMN	STDM	ORBIT	D	TIME	LONG	ORBIT	HRMN
					R	CORR		HRMNSS	DEG						R				
					S	LALO									S				
DAYTIME THIR										DESC. MODE									
681								004631	E160.9	682	0118	0307		683R	A				
682	0203	0252		683R	A	2N		023347	E134.1	683	0304	0459		683R	B				
683	0350	0439		683R	B			042184	E107.3	684	0505	0647		684R	B				
684	0538	0626		684R	B			060821	E088.4	685	0646	0826		685A	A				
685	0725	0814		685A	A			075537	E053.6	686	0827	1012		686A	B				
686	0912	1001		686A	B			094254	E026.8	687	1014	1159		687A	A				
687	1100	1148		687A	A			113018	W088.8	688	1158	1345		688A	B				
688	1247	1335		688A	B			131727	W026.9	689	1314	1528		689A	A				
689	1434	1523		689A	A			150443	W053.7	690	1528	1709		690A	B				
690	1621	1710		690A	B			165160	W088.5	691	1712	1856		691A	A				
691	1809	1855		691A	A			183915	W107.3	692	1857	2042		692A	B				
692	1956	2041		692A	B	1N		202633	W134.1	693	2043	2238		693A	A				
693	2143	2232		693A	A			221350	W160.9										
NIGHTTIME THIR										NEWS - SCR - ITPR									
681	0118	0203		683R	A	2S		014002	W032.5	0118	0307		683R	A					
682	0252	0307		683R	A	2S		032718	W059.3	0305	0459		683R	B					
682	0304	0350		683R	B			051435	W086.1	0505	0647		684R	B					
683	0439	0458		683R	B					0646	0826		685A	A					
683	0505	0538		684R	B			070151	W113.8	0826	1013		686A	B					
684	0626	0646		684R	B					1011	1159		687A	A					
684	0646	0725		685A	A			004980	W139.8	1158	1345		688A	B					
685	0814	0825		685A	A			103624	W166.6	1343	1528		689A	A					
685	0833	0912		686A	B			122341	E166.6	1527	1709		690A	B					
686	1001	1012		686A	B			141057	E139.8	1711	1855		691A	A					
686	1012	1100		687A	A					1855	2042		692A	B					
687	1148	1159		687A	A					2042	2238		693A	A					
687	1158	1247		688A	B					2233	0031		696R	A					
688	1335	1344		688A	B														
688	1344	1434		689A	A														
689	1527	1621		690A	B			155814	E113.8										
690	1711	1809		691A	A			174531	E086.1										
691	1857	1956		692A	B	1S		193247	E059.3										
692	2075	2143		693A	A			212004	E032.5										
693	2233	2338		696R	B			230720	E005.7										

16.7 CHANNEL ON-OFF DIFFERENCE
685 0826 0912 686A B

SECTION 3

ELECTRICALLY SCANNING MICROWAVE RADIOMETER DISPLAYS

One ESMP display per day has been selected for presentation in this section. All ESMR coverage times are listed in the Data Availability On-Off Times (Table 2-2). Each display contains the following items:

Nimbus 5 ESMR

This identifies the satellite (Nimbus 5) and the experiment (ESMR).

Date

This identifies the Greenwich day, month, and year the data is recorded.

Data Orbit

This data orbit number identifies only the last data orbit on each display. Usually parts of two data orbits are on the same display, since all data acquired during each satellite interrogation is presented on one 4 x 5-inch negative. In general, nighttime data is on the left and daytime data is on the right.

Program

No Program number is identified on these displays. Its intended use was to identify the appropriate table which would list the temperature interval for each gray level in the gray scale. Only two programs have been used and they are listed in Table 3-1.

Gray Scale

A single 11-step gray scale serves to define ESMR brightness temperatures in all three swaths, by the assignment of a different brightness temperature range to each step for each swath. Table 3-1 defines the two temperature-versus-gray-scale programs used during this catalog period.

Image Swaths (1, 2, 3)

A set of three swaths, labeled 1, 2, and 3, separates the same recorded data into three temperature intervals (defined in Table 3-1).

Table 3-1

**ESMR GRAY SCALE STEPS VERSUS BRIGHTNESS TEMPERATURE FOR
EACH OF THE THREE ESMR SWATHS IN THE PICTORIAL DISPLAYS
(Temperatures in °K)**

Swath		Program 1 Orbit 104 through 502			Program 2 Orbit 503 through 693		
		1	2	3	1	2	3
Gray Scale Number	(black) 1	> 200	> 259	> 280	> 210	> 266	> 290
	2	190-200	256-259	277-280	202-210	258-266	286-290
	3	180-190	253-256	274-277	194-202	250-258	282-286
	4	170-180	250-253	271-274	186-194	242-250	278-282
	5	160-170	240-250	268-271	178-186	234-242	274-278
	6	150-160	230-240	265-268	170-178	226-234	270-274
	7	140-150	220-230	262-265	162-170	218-226	266-270
	8	130-140	210-220	259-262	154-162	210-218	262-266
	9	120-130	200-210	256-259	146-154	202-210	258-262
	10	110-120	190-200	253-256	138-146	194-202	254-258
	(white) 11	< 110	< 190	< 253	< 138	< 194	< 254

The right set of three swaths is a continuation of the left set and is offset because of the limitations of the 4 x 5-inch film format. The three-swath presentation is used because it shortens the temperature ranges spanned by each step of the gray scale, and, therefore, permits discrimination of various meteorological and terrestrial phenomena.

Significant in swath 1 are the areas of atmospheric moisture and rainfall over oceans. Swath 2 brightness temperature range discriminates between new and multi-year ice and, over oceans, shows only rainfall areas. The high brightness temperatures of swath 3 outline some land areas of high soil moisture content or snow cover, but oceans lose almost all their temperature contrasts.

Time Code Index

The Time Code Index, in hours and minutes (GMT), is adjacent to the gray scale. The top number in each set is for the left group of three swaths; the bottom number in each set is for the right group of three swaths. Time bars are spaced at five-minute intervals. The same time bars are used for the left and right swaths. The top or bottom time code index determines the time for each time bar.

Grids

Two grids, labeled GRID L and GRID R, identify the geographic coordinates for the imagery of the left (L) and the right (R) set of swaths, respectively. Latitude lines are spaced at 10-degree intervals. Longitude lines are spaced at 10-degree intervals to 60 degrees north and south of the equator, and at 20-degree intervals from 60 to 80 degrees north and south. The equator (EQ), North Pole (NP), and South Pole, (SP) are labeled, as well as longitude values at the equator, 30, and 60 degrees north and south of the equator.

Swath Display Program

The antenna gain function is different at each beam position. Thus, to present a uniform surface temperature as the same shade of gray across a scan track requires that the output voltage at each antenna position be adjusted for its beam position and voltage. If the corrections are not precise, vertical bands will be evident in the ESMR pictorial displays.

Three different sets of calibration constants (Display Format Programs) were used during the first two months of operation to eliminate these vertical bands. Figures 3-1, 3-2, and 3-3 show the vertical banding produced by each. The display Program used for Figure 3-3 shows that almost all temperature variations due to antenna beam positions have been eliminated.



Figure 3-2. Vertical Banding Produced on ESMR Images with Program 2 Display Format (Used on Orbits 503 through 566).



Figure 3-3. Vertical Banding Produced on ESMR Image with Program 4 Display Format (Used on Orbits 567 through 693).

With display Program 1, which uses prelaunch calibration constants, the digital brightness temperature values have about $\pm 20^\circ\text{K}$ accuracy. With a change to postlaunch calibration constants, Programs 2 and 4 produce about $\pm 2^\circ$ to 5°K temperature value accuracies. Of course, with Programs 2 and 4, the displayed temperature values are accurate only within the limits of the temperature range of each step of the gray scales as defined in Table 3-1. Table 3-2 shows which display format program and which gray scale step versus brightness temperature program was used on each orbit.

A description of the ESMR experiment may be found in The Nimbus 5 User's Guide, Section 4, and instructions for ordering the data, both pictorial and digital, are in Section 1.7 of that Guide.

Table 3-2

COVERAGE INTERVALS FOR EACH ESMR DISPLAY FORMAT AND
GRAY SCALE BRIGHTNESS TEMPERATURE PROGRAM

Date	Orbit	Program Format Display	Gray Scale Brightness Temperature Program
19 Dec - 17 Jan	104-502	1	1
17 Jan - 22 Jan	503-566*	2	2
22 Jan - 31 Jan	567-693	4	2

*550 & 551, Display Format 4









3-12

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3-13

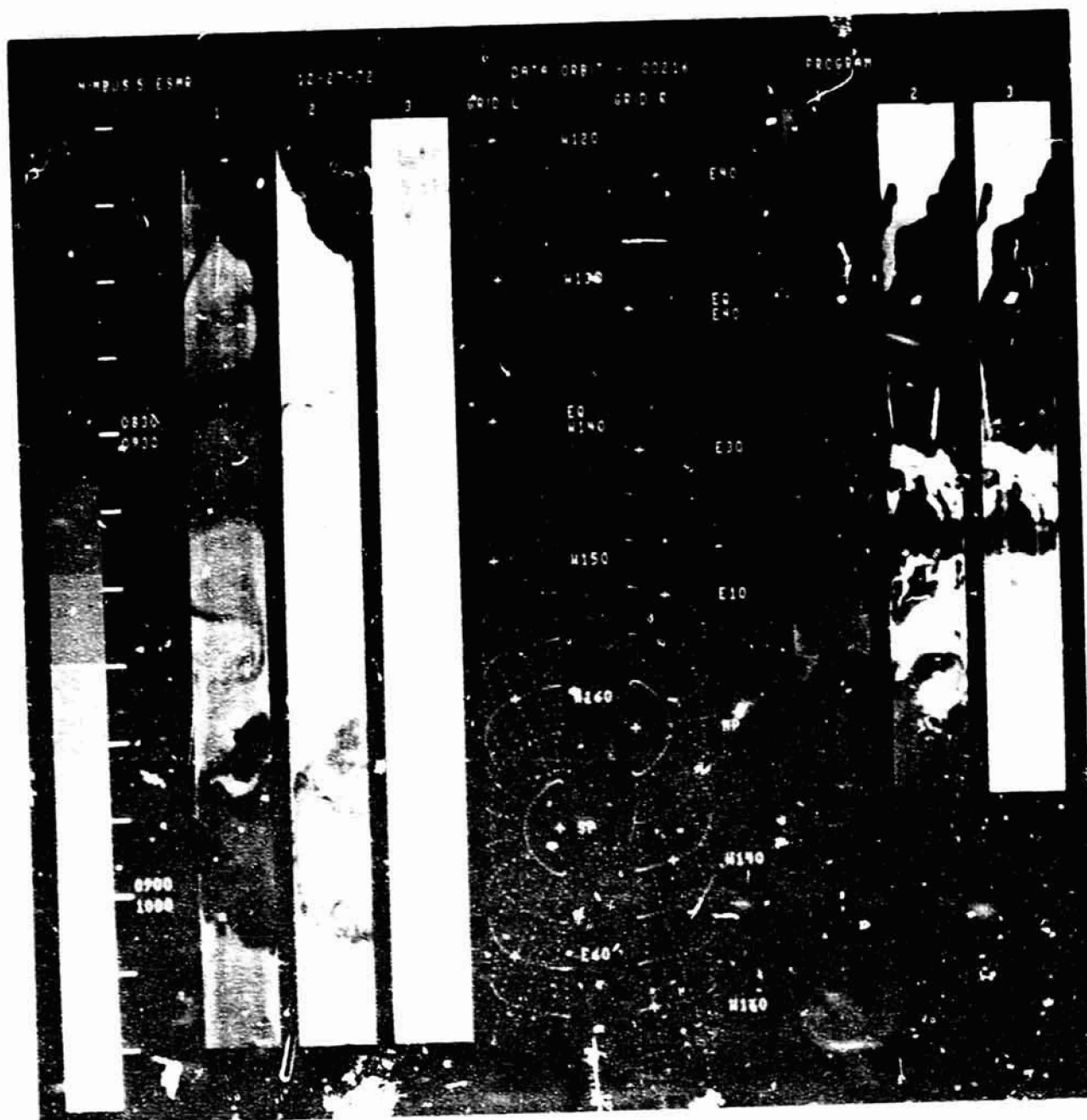
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.



3-14

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.









3-18

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



3-19

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,







NIMBUS 5 ESR

01-05-73

DATA ORBIT - 00337

PROGRAM

0830
0930

1

2

3

GRID L

GRID R

1

2

3

+ W120

E40

+ W140

E0
E30

+ E0
W140

E20

+ W150

E10

+ W170

NP

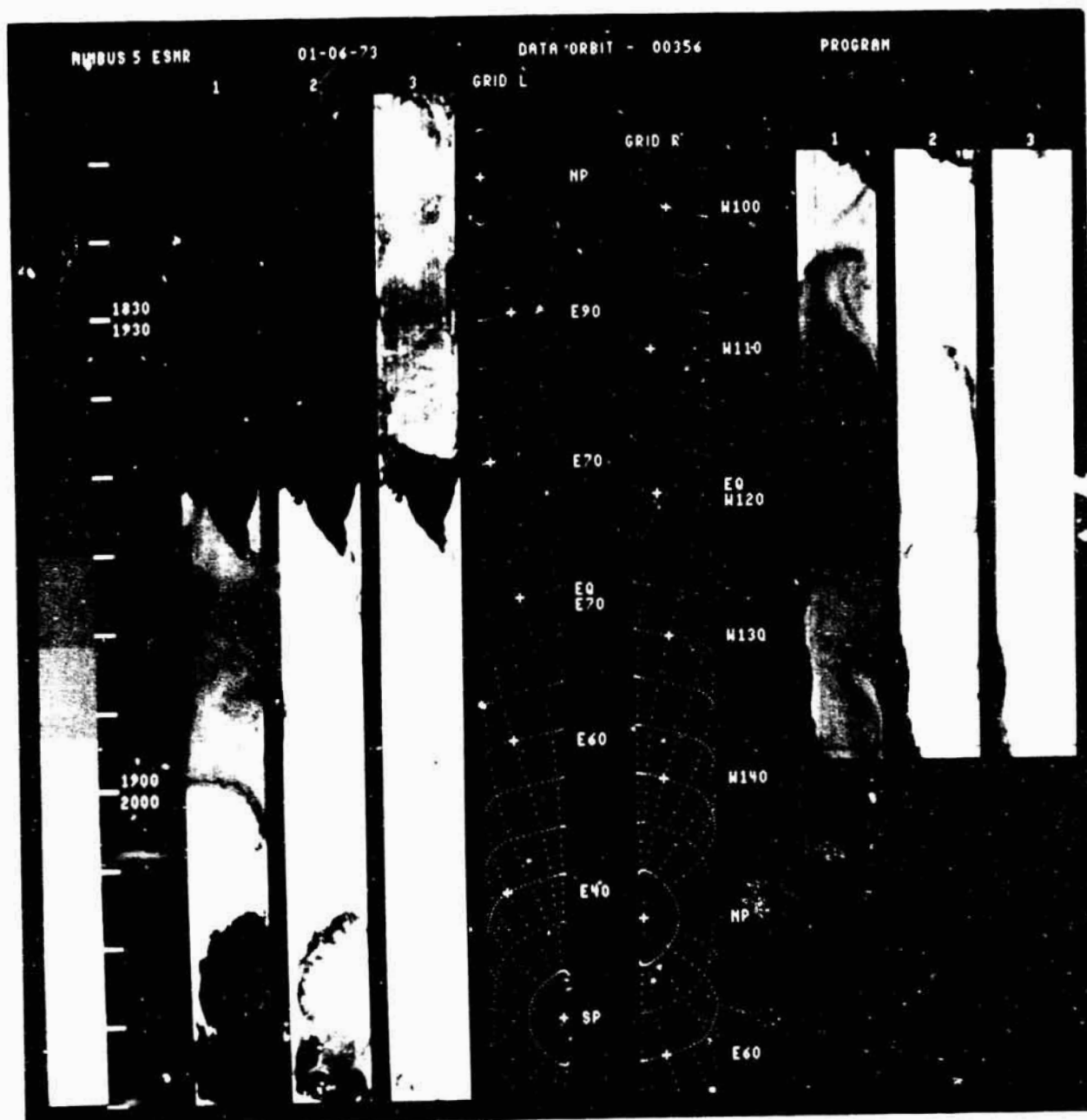
+ SP

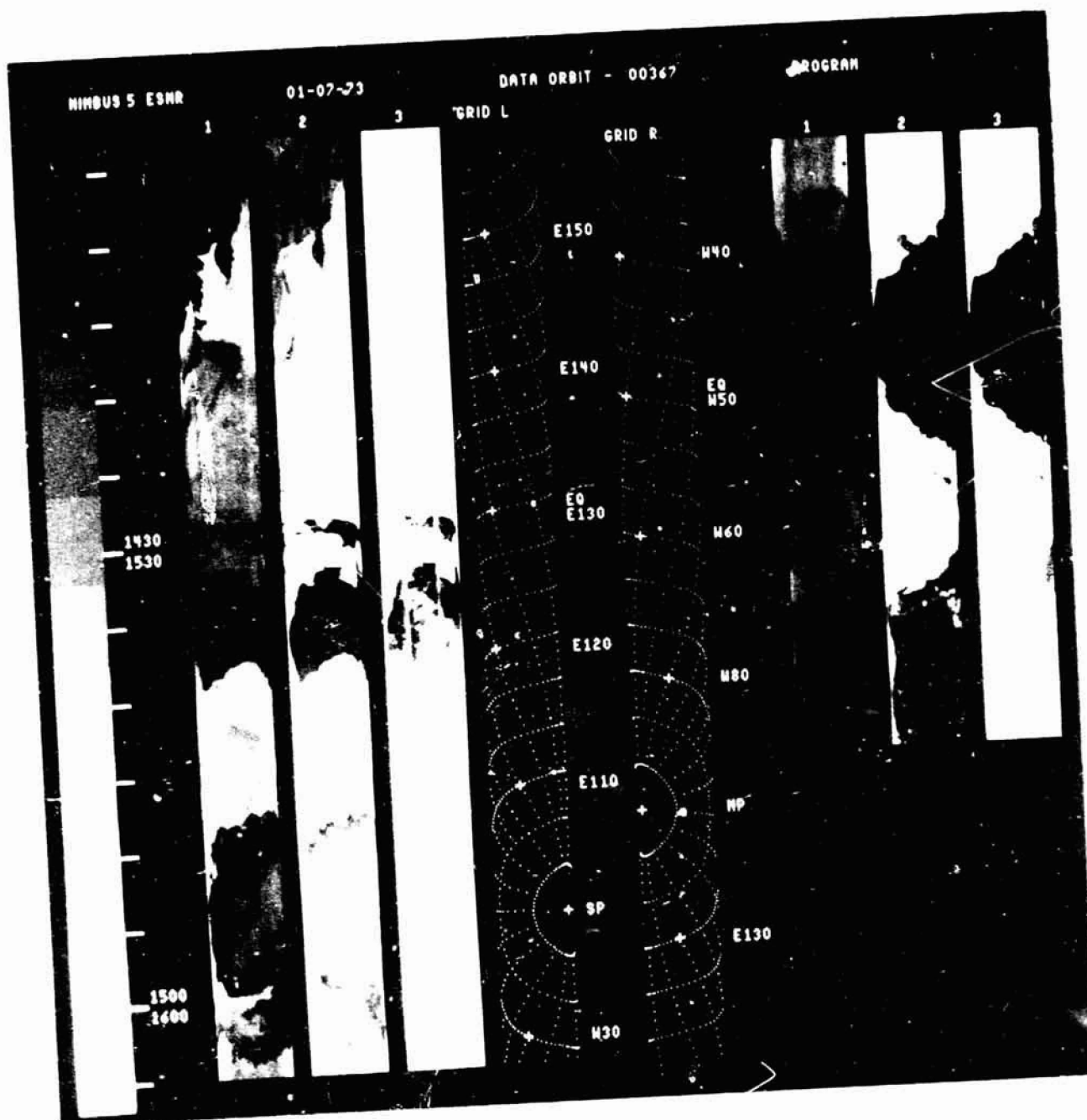
W150

+ E50

W160

0900
1000







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NINBUS 5 ESMR

01-09-73

DATA ORBIT - 00387

PROGRAM

1

2

3

GRID L

GRID R

1

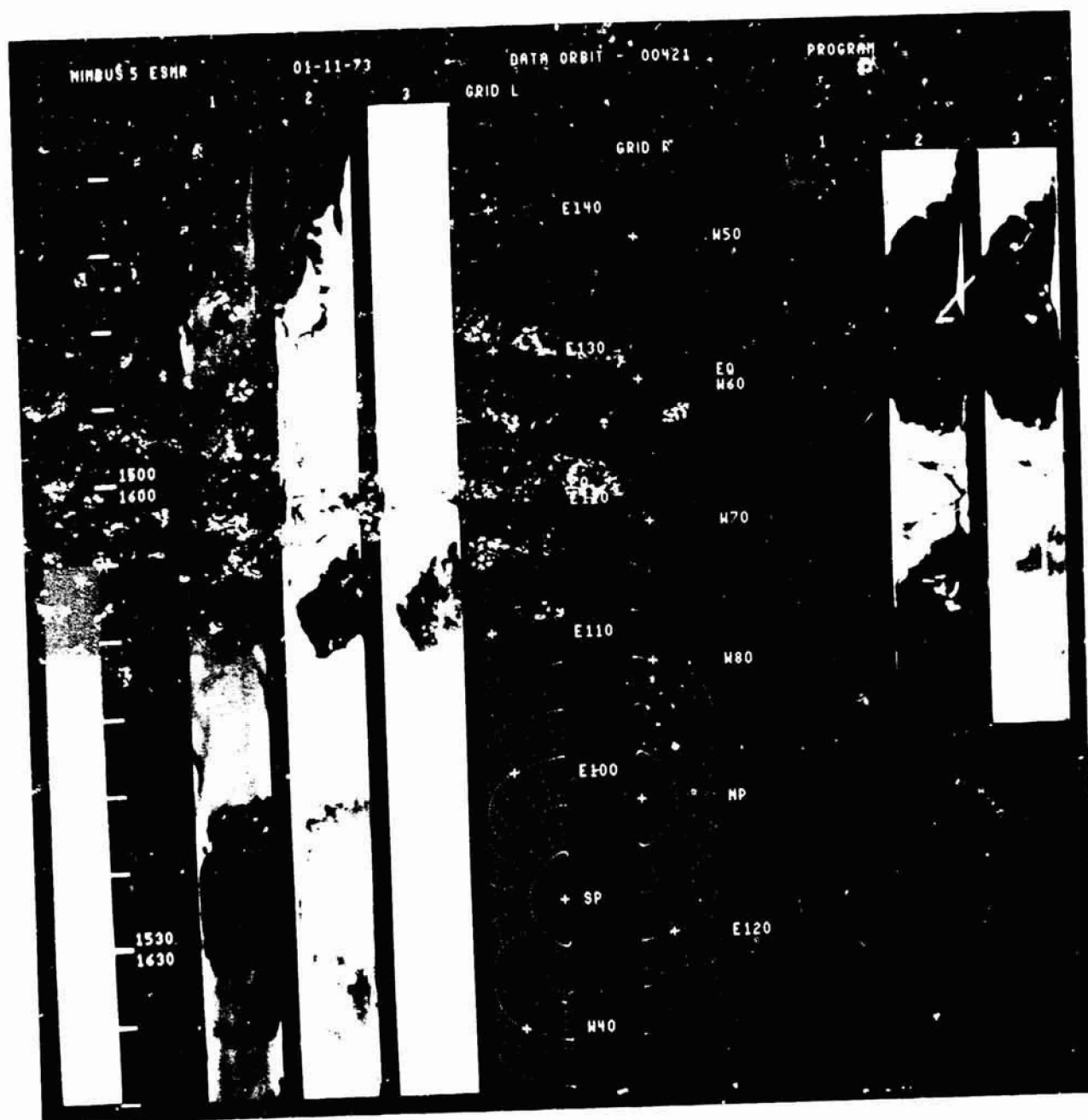
2

3

0200
0300

0230
0330

+ W20
+ E140
+ W40
+ EQ
E130
+ EQ
W50
+ E120
+ W50
+ E110
+ W70
+ MP
+ SP
+ W50
+ E150
+ W60







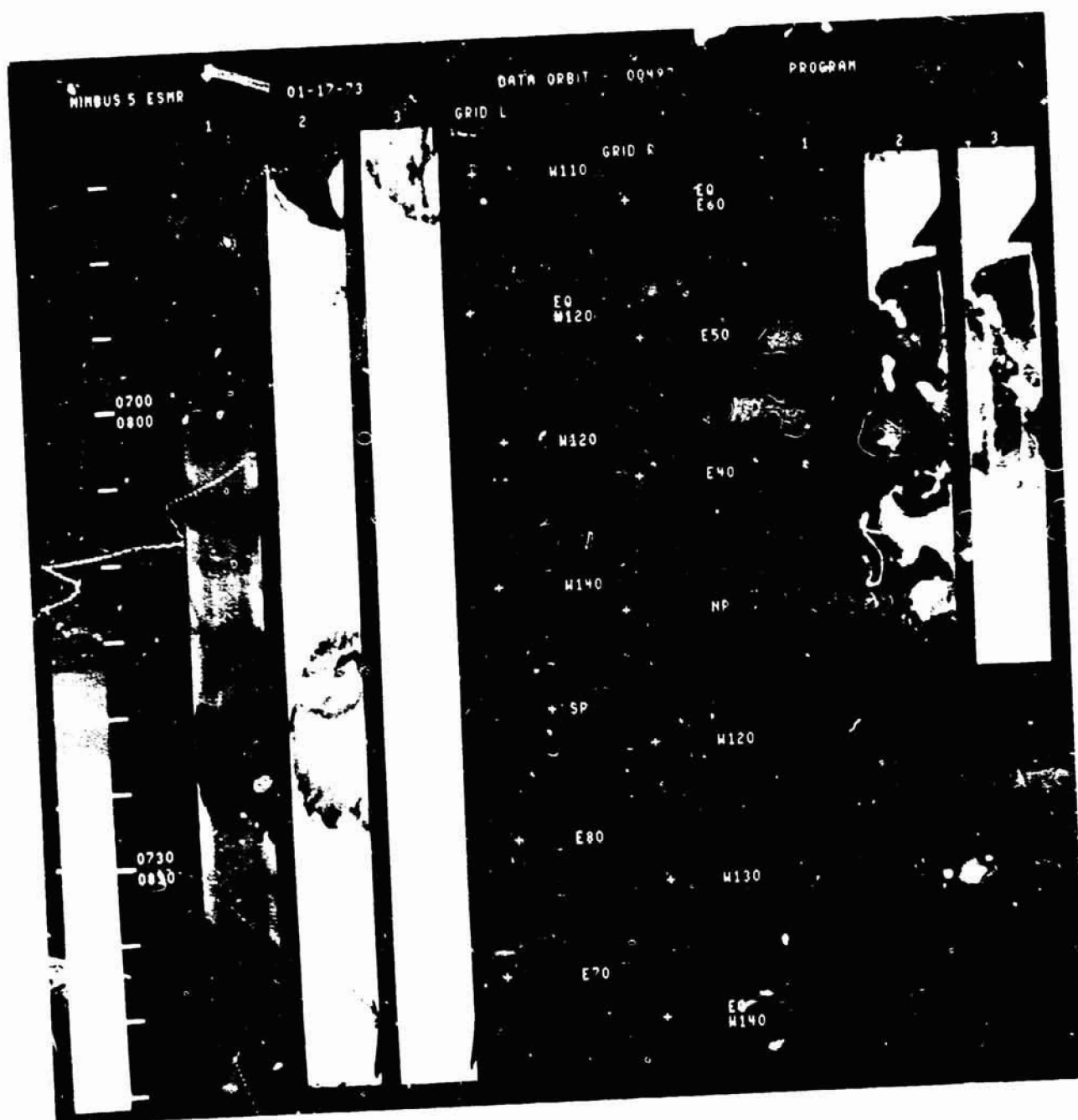


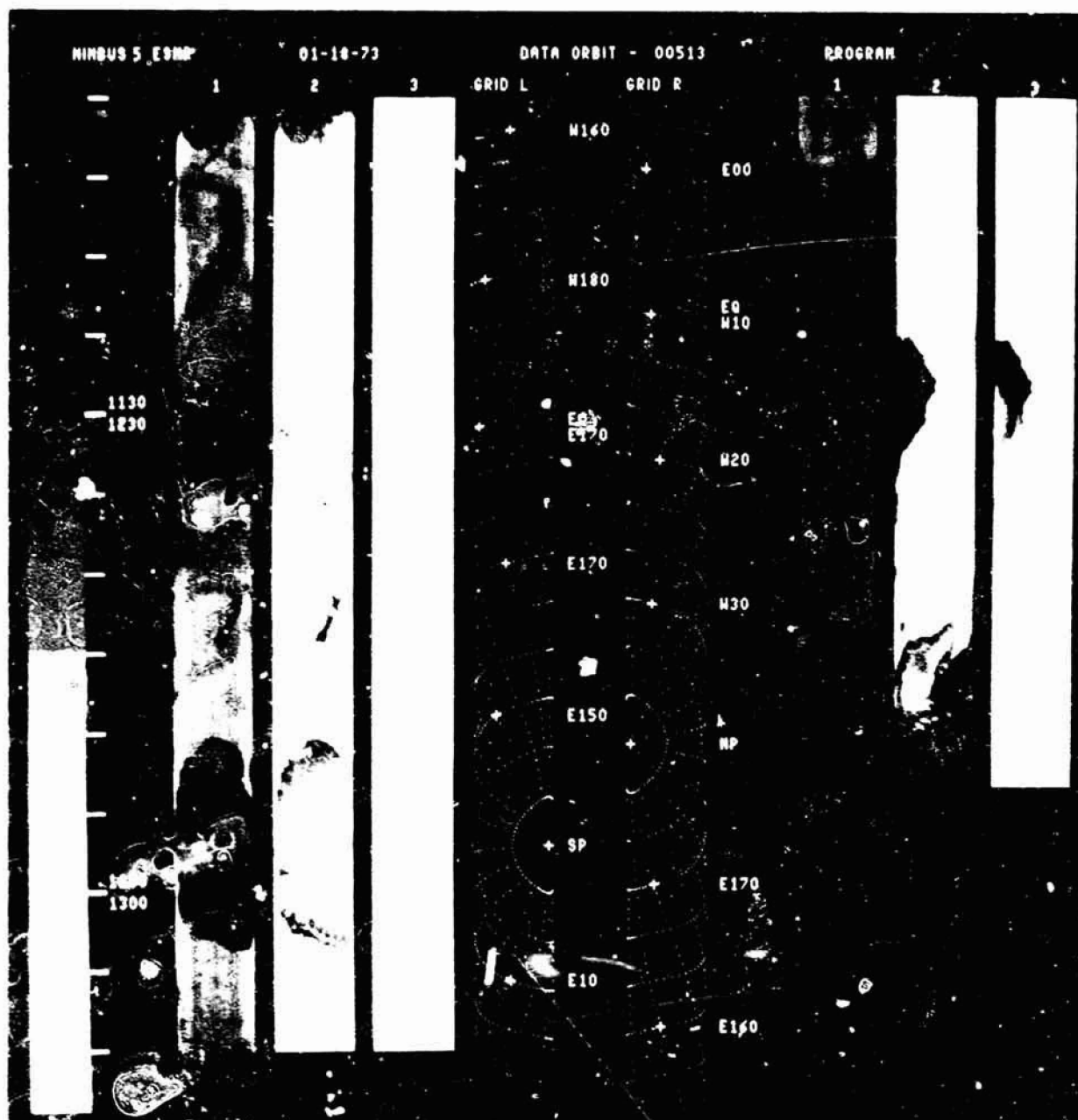




R-35

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01-10-73

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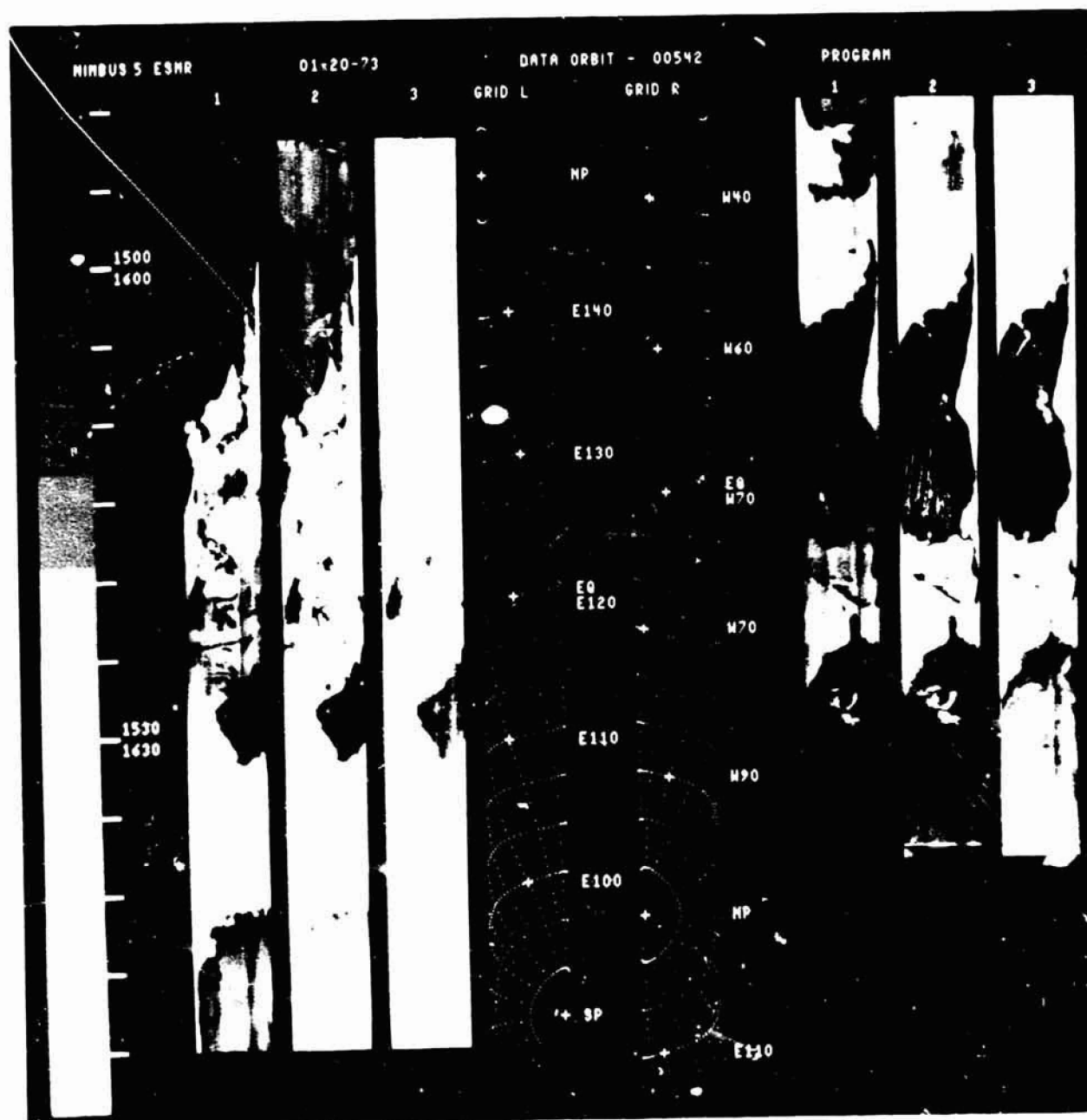
NIMBUS 5 ESHR

01-19-73

DATA ORBIT - 00528

PROGRAM





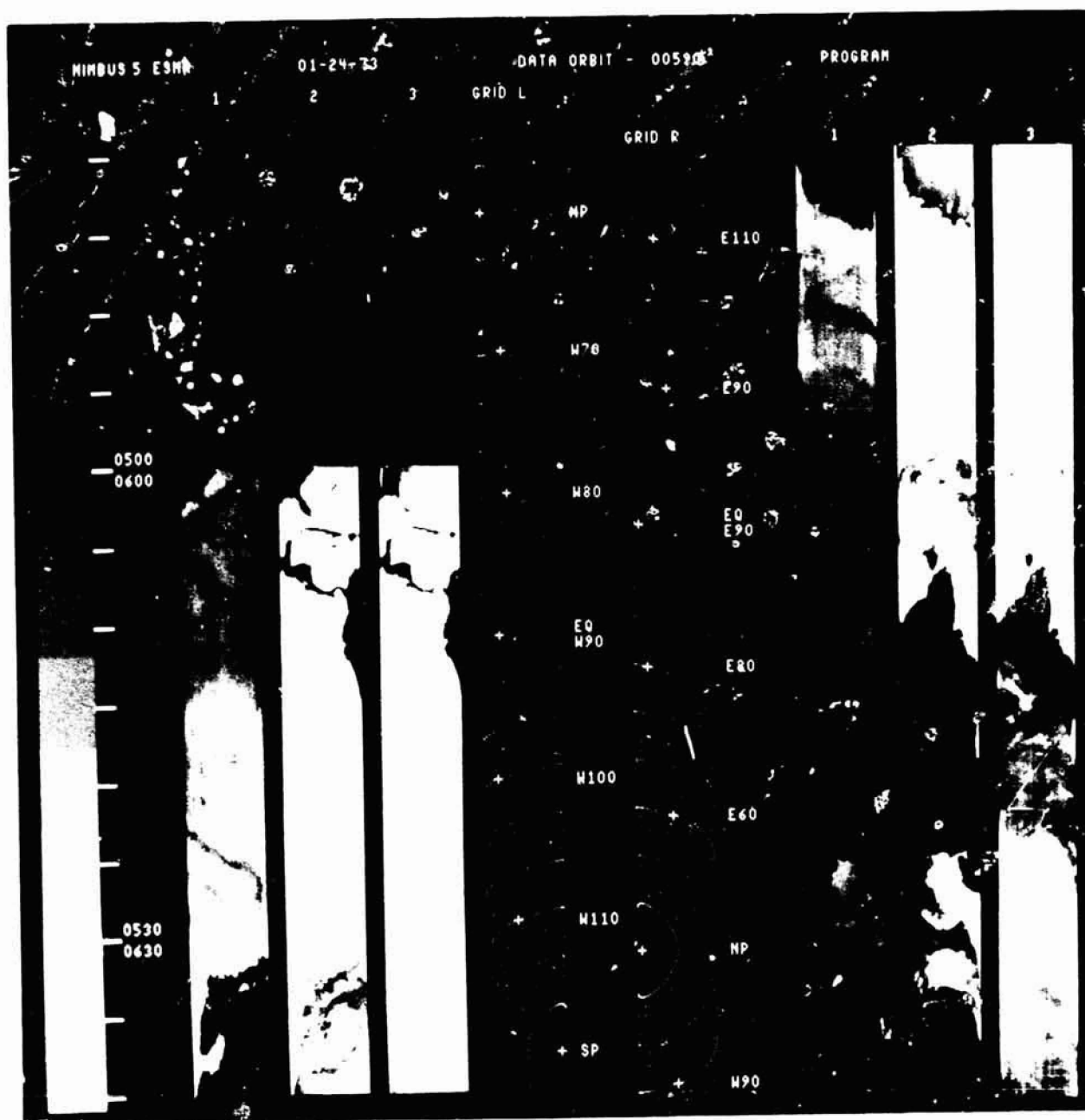


0-10

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PROGRAM

GRVD

3610

1

3

1030
1130

1100
1200

EC
W:70

F01

4160

420

E170

NE

54

W120

£30

E130

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SECTION 4

TEMPERATURE HUMIDITY INFRARED RADIOMETER MONTAGES

This section pictorially documents the data from the Temperature Humidity Infrared Radiometer Subsystem carried on the Nimbus 5 Meteorological Satellite. Section 4.1 contains all nighttime THIR 11.5 and 6.7 micrometer montages and Section 4.2 contains all daytime THIR 11.5 and 6.7 micrometer montages, arranged in chronological order. Key latitudes can be read from the superposed grids. Grid points are identified where each swath crosses 60°N, 30°N, EQUATOR, 30°S and 60°S.

Vellum Location Guide overlays, attached to the back of this document, are to be used for general orientation with the data presented in each THIR montage. Proper alignment of the overlay grid is accomplished by matching the grid indices on the equator with the two "T" marks on each montage.

Each THIR montage is provided with a time scale to determine the Greenwich Mean Time limits required to order processed THIR grid print maps (see page 38, The Nimbus 5 User's Guide). The time scale is used to determine the number of minutes from ascending (daytime data) or descending (nighttime data) node time for the interval of data required. To obtain the GMT for daytime data, the measured time is to be added to the ascending node time in the northern hemisphere and subtracted in the southern hemisphere. For nighttime data, the measured time is to be subtracted from the descending node time in the northern hemisphere and added in the southern hemisphere. The ascending and descending node times are given in Table 2-2.

The following alternate procedure also establishes GMT limits. Knowing the latitude limits of the study area, the minutes from ascending or descending node can be directly interpolated from Table 4-1. These time values can then be added to or subtracted from node times given in Table 2-2.

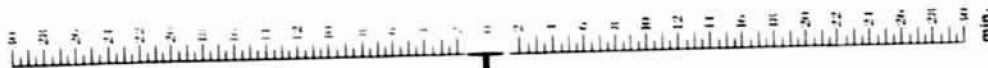
A description of the THIR experiment and instructions for ordering THIR data may be found in The Nimbus 5 User's Guide, Section 2.

Table 4-1

**LATITUDE VERSUS MINUTES FROM
ASCENDING OR DESCENDING NODE**

Latitude from AN or DN	Minutes and Seconds from AN or DN
0	0:00
5	1:31
10	3:02
15	4:33
20	6:03
25	7:34
30	9:05
35	10:36
40	12:08
45	13:40
50	15:12
55	16:44
60	18:18
65	19:52
70	21:33
75	23:26
78	24:44
80.1	26:49
78	29:00
75	30:09
70	31:51
65	33:35

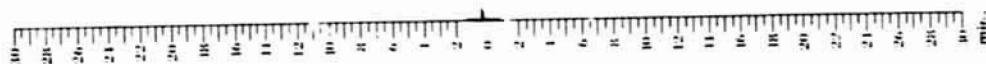
SECTION 4.1
TEMPERATURE HUMIDITY INFRARED RADIOMETER
NIGHTTIME MONTAGES

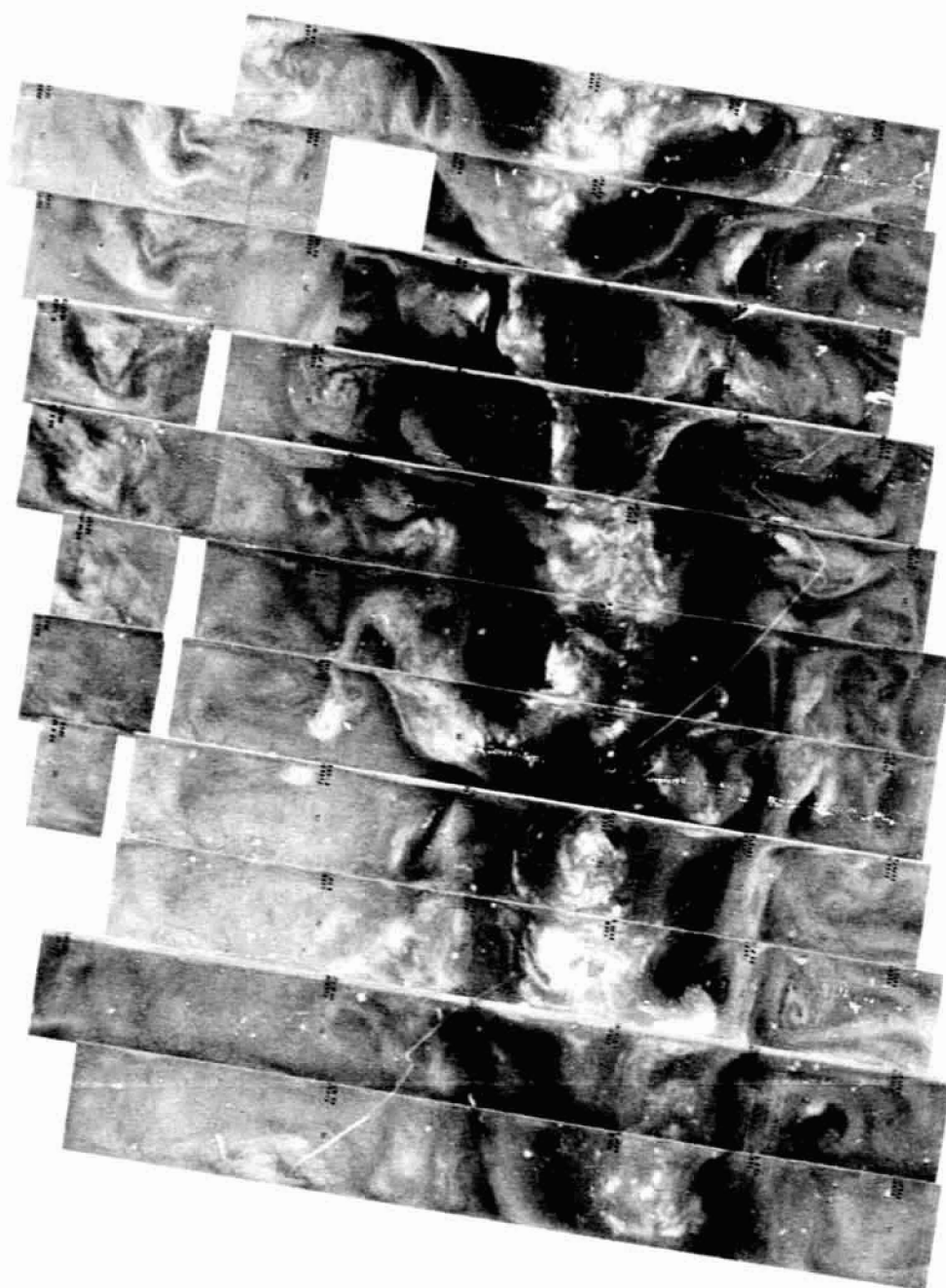
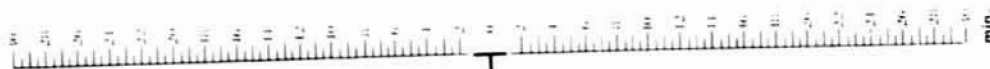


116 115 114 113 112 111 110 109 108 107 106 105 104

1° DECEMBER 1972

11.5 μ m





104

105

106

107

108

109

110

111

112

113

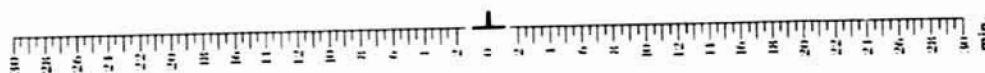
114

115

116

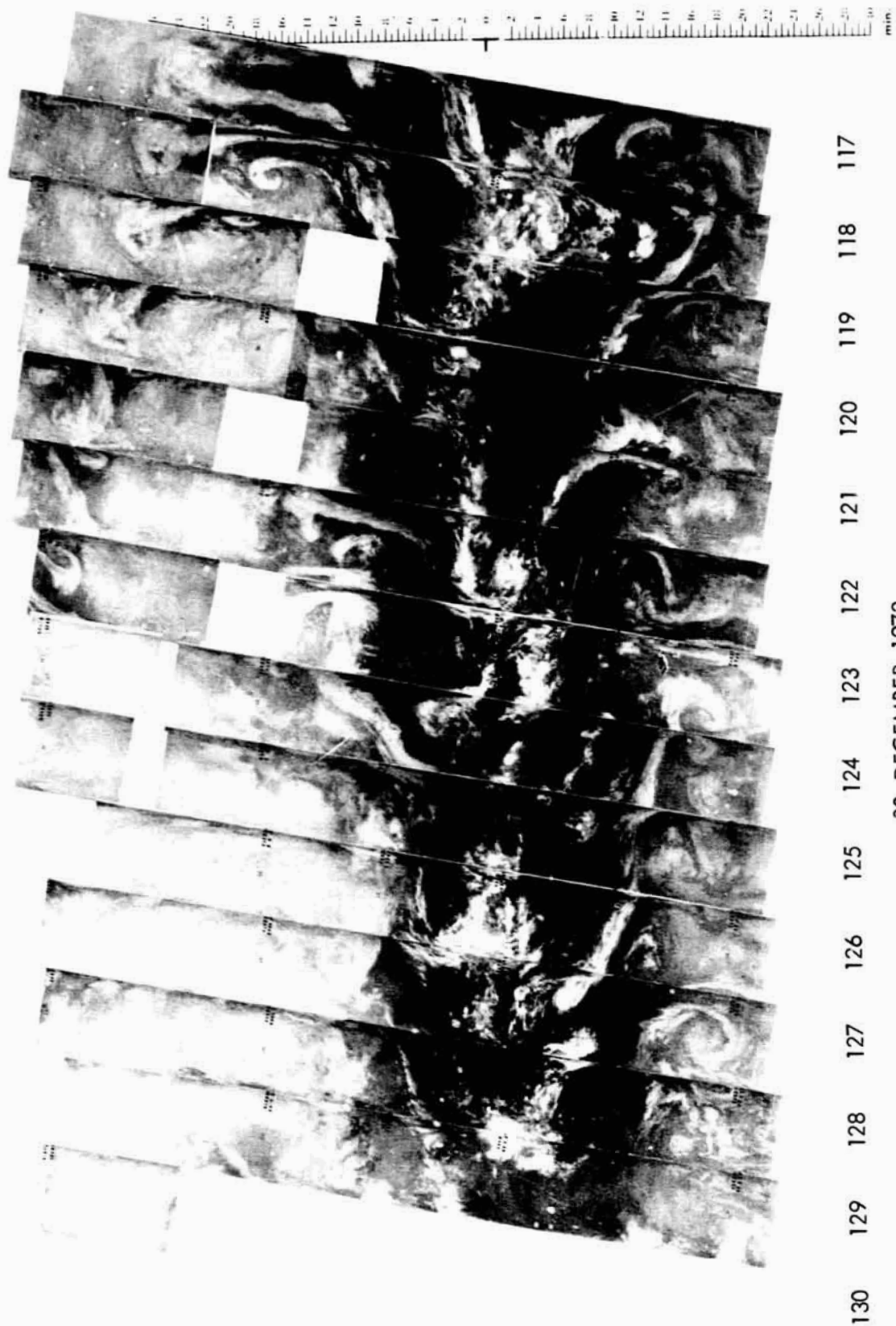
19 DECEMBER 1972

6.7 μ m



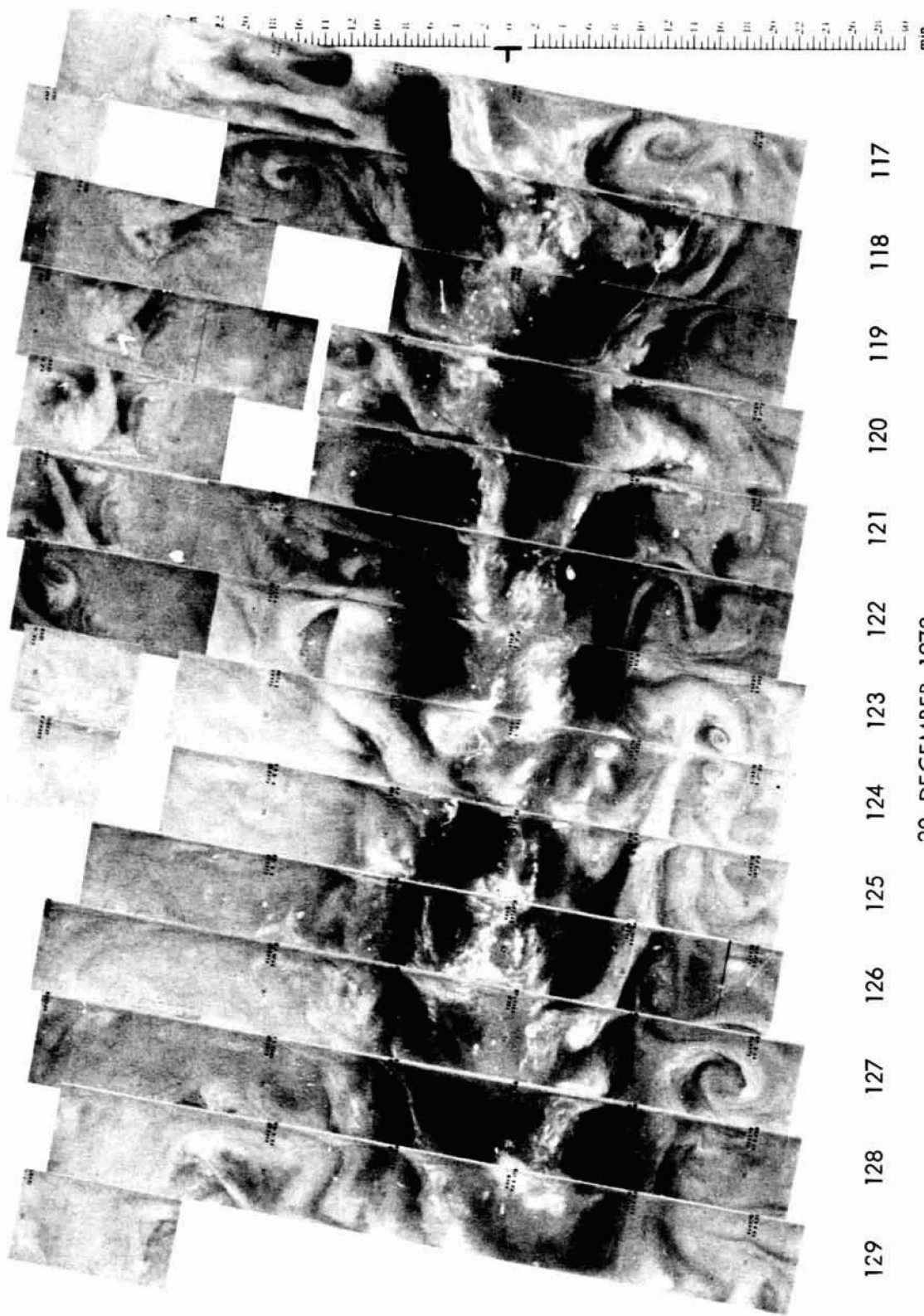
4-5

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20 DECEMBER 1972

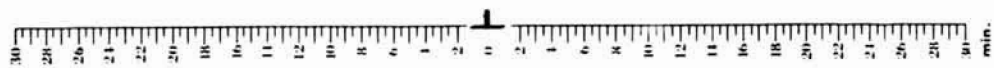
11.5 μ m



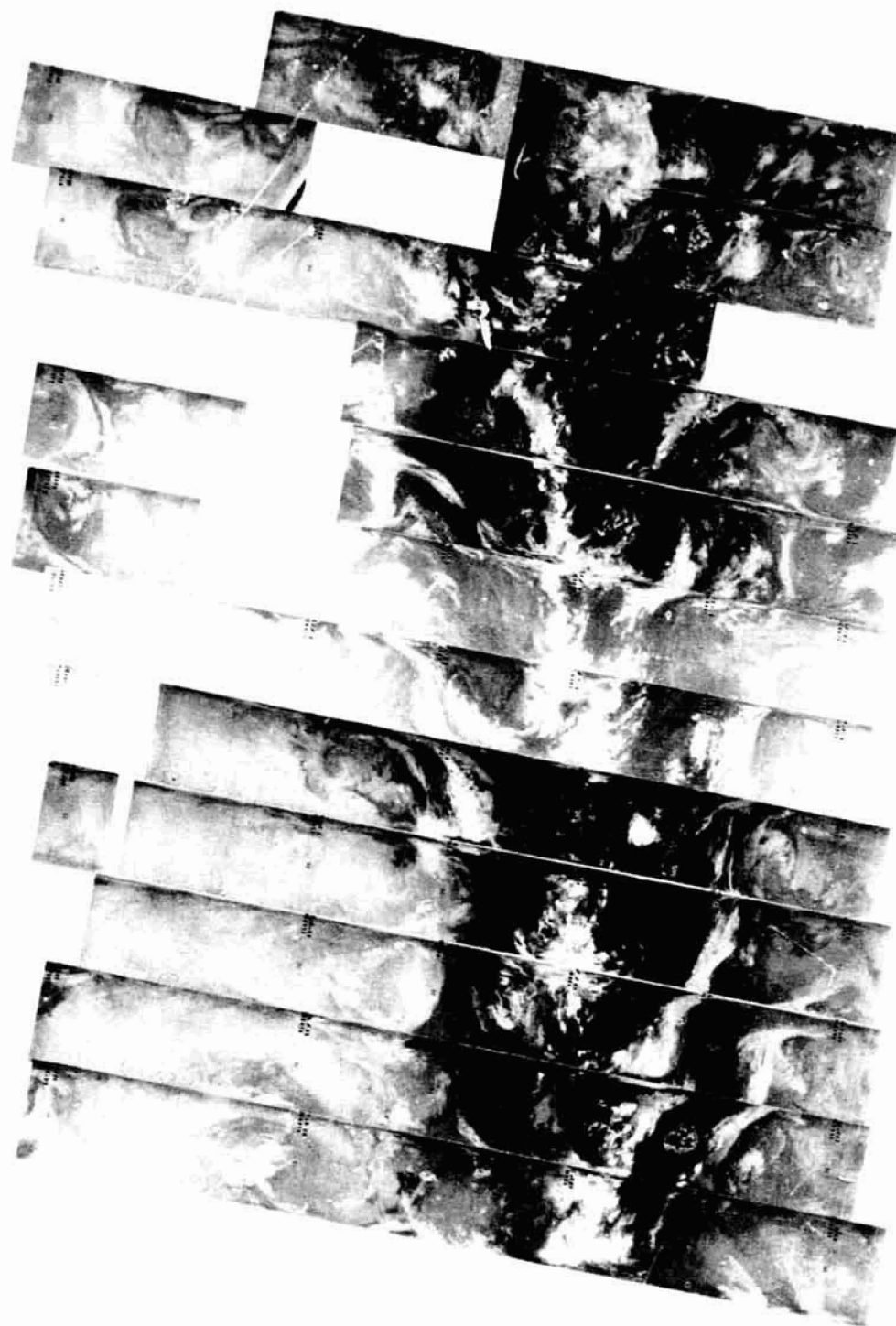
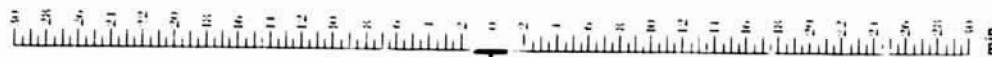
130 129 128 127 126 125 124 123 122 121 120 119 118 117

20 DECEMBER 1972

6.7 μ m



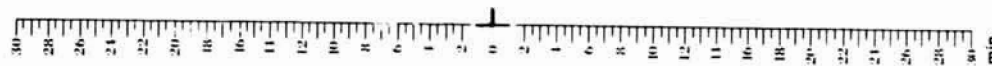
4-7



143 142 141 140 139 138 137 136 135 134 133 132 131

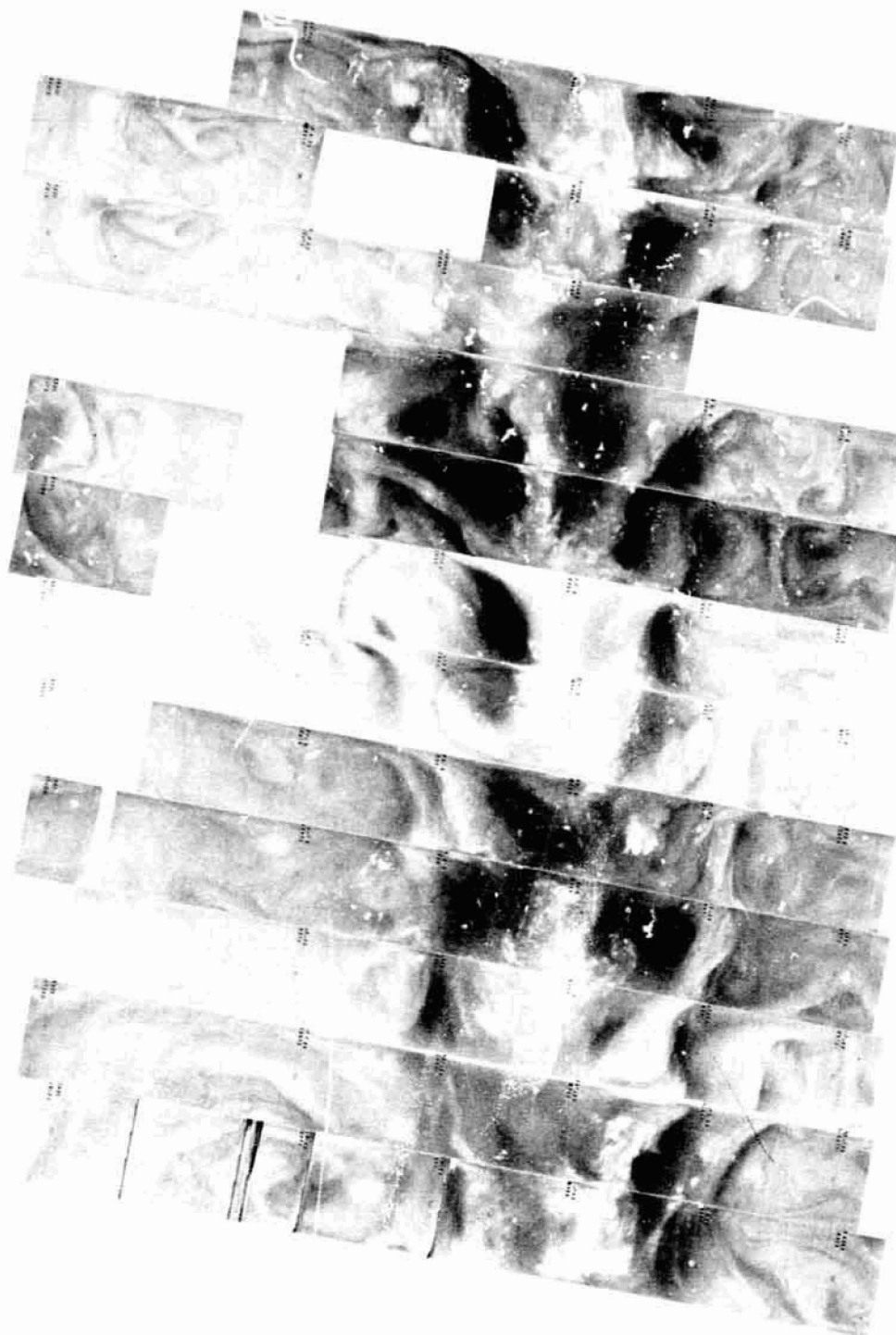
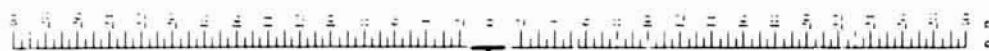
21 DECEMBER 1972

11.5 μ m



4-8

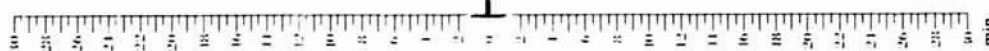
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143 142 141 140 139 138 137 136 135 134 133 132 131

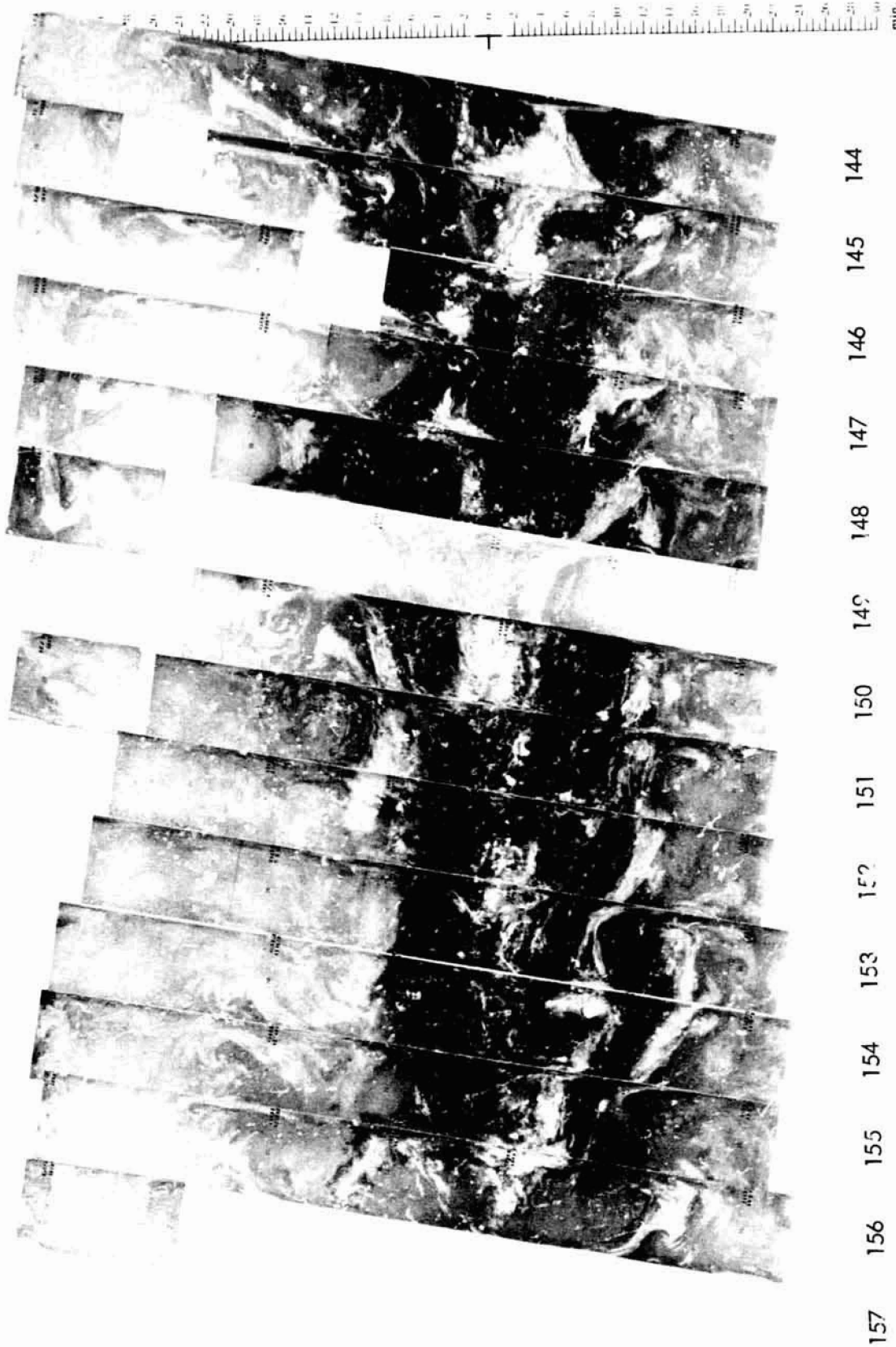
21 DECEMBER 1972

6.7 μ m



4-9

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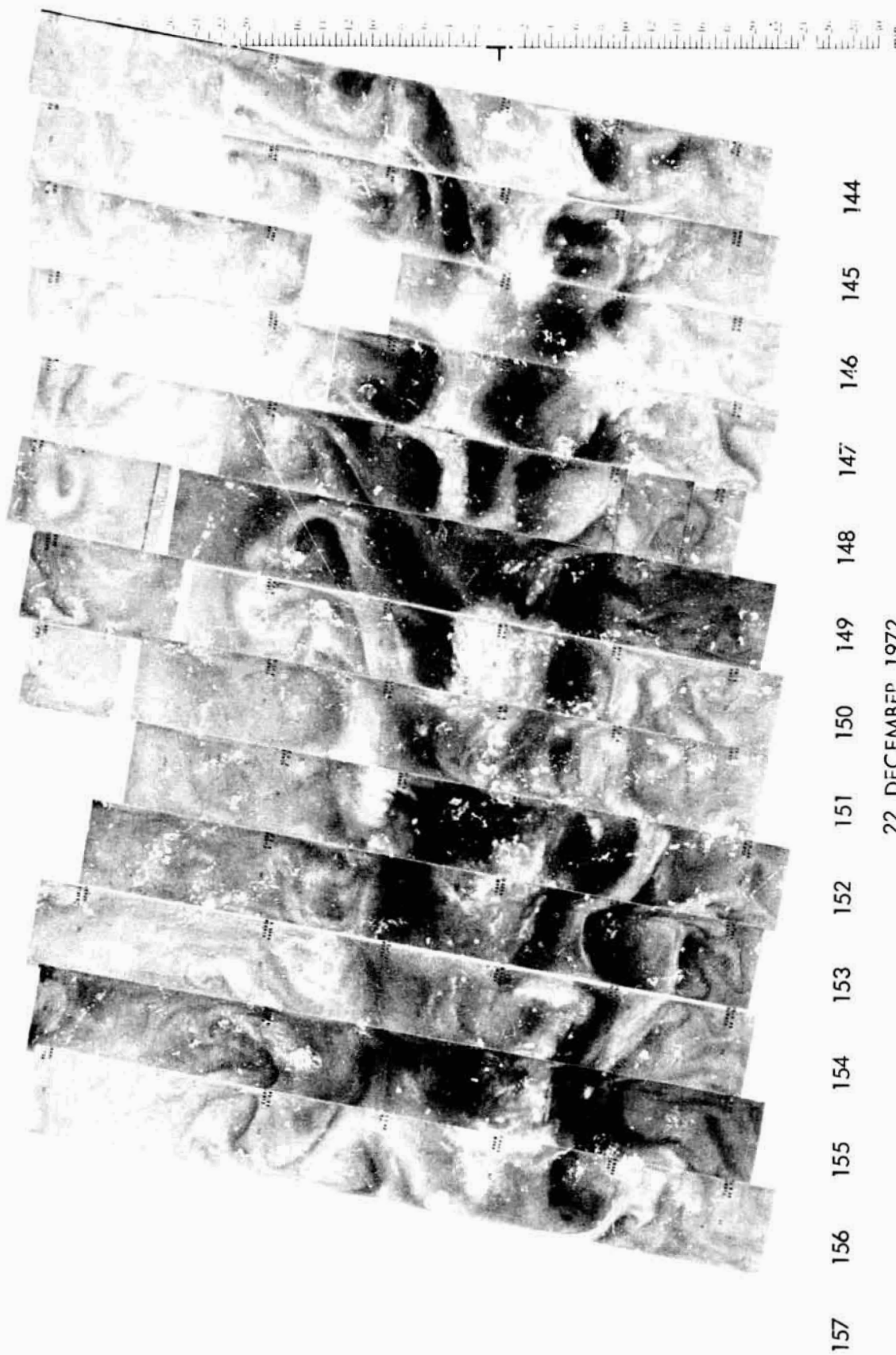


22 DECEMBER 1972

11.5 μ m

4-10

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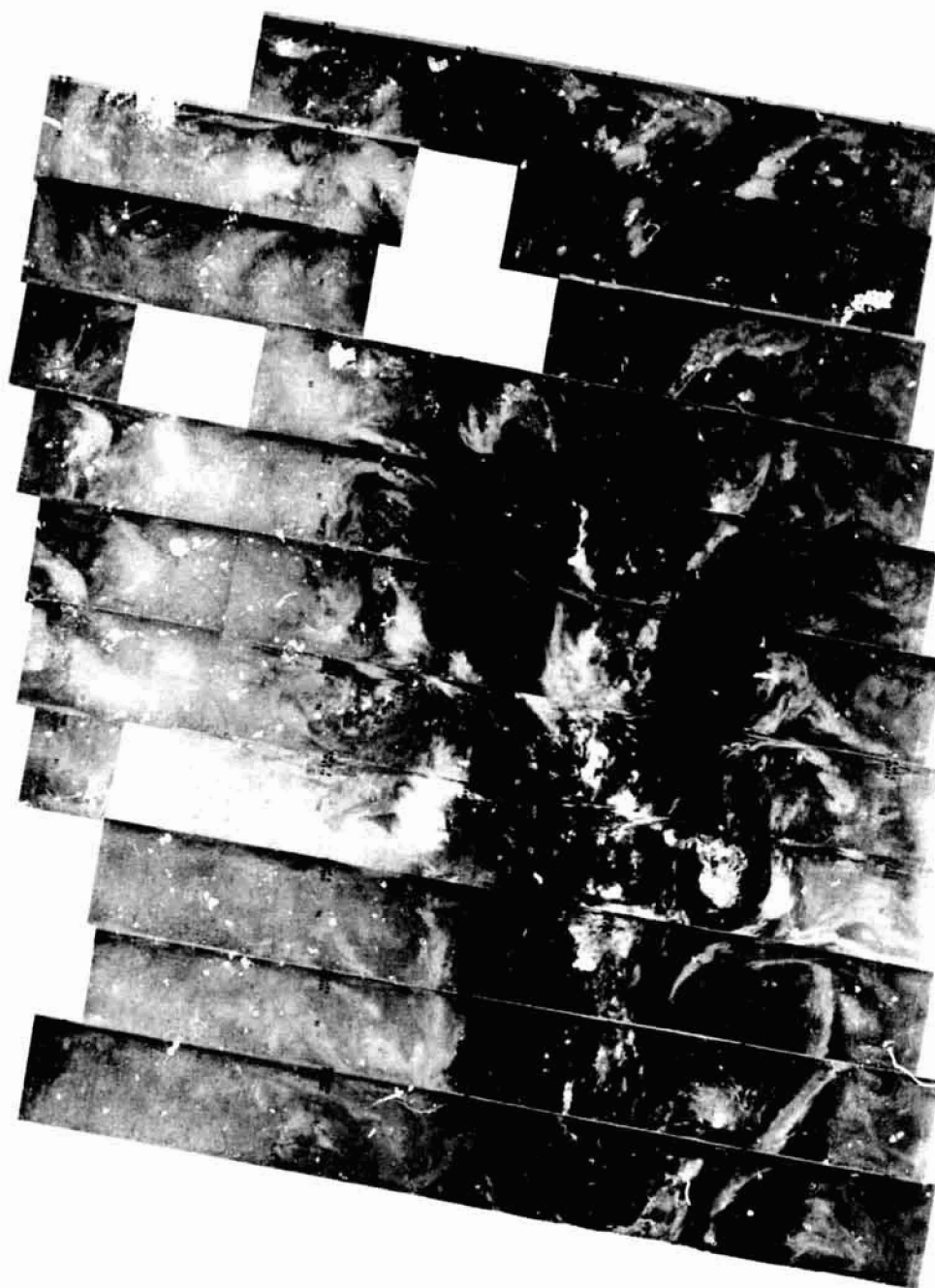


22 DECEMBER 1972

6.7 μ m

4-11

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



170 169 168 167 166 165 164 163 162 161 160 159 158

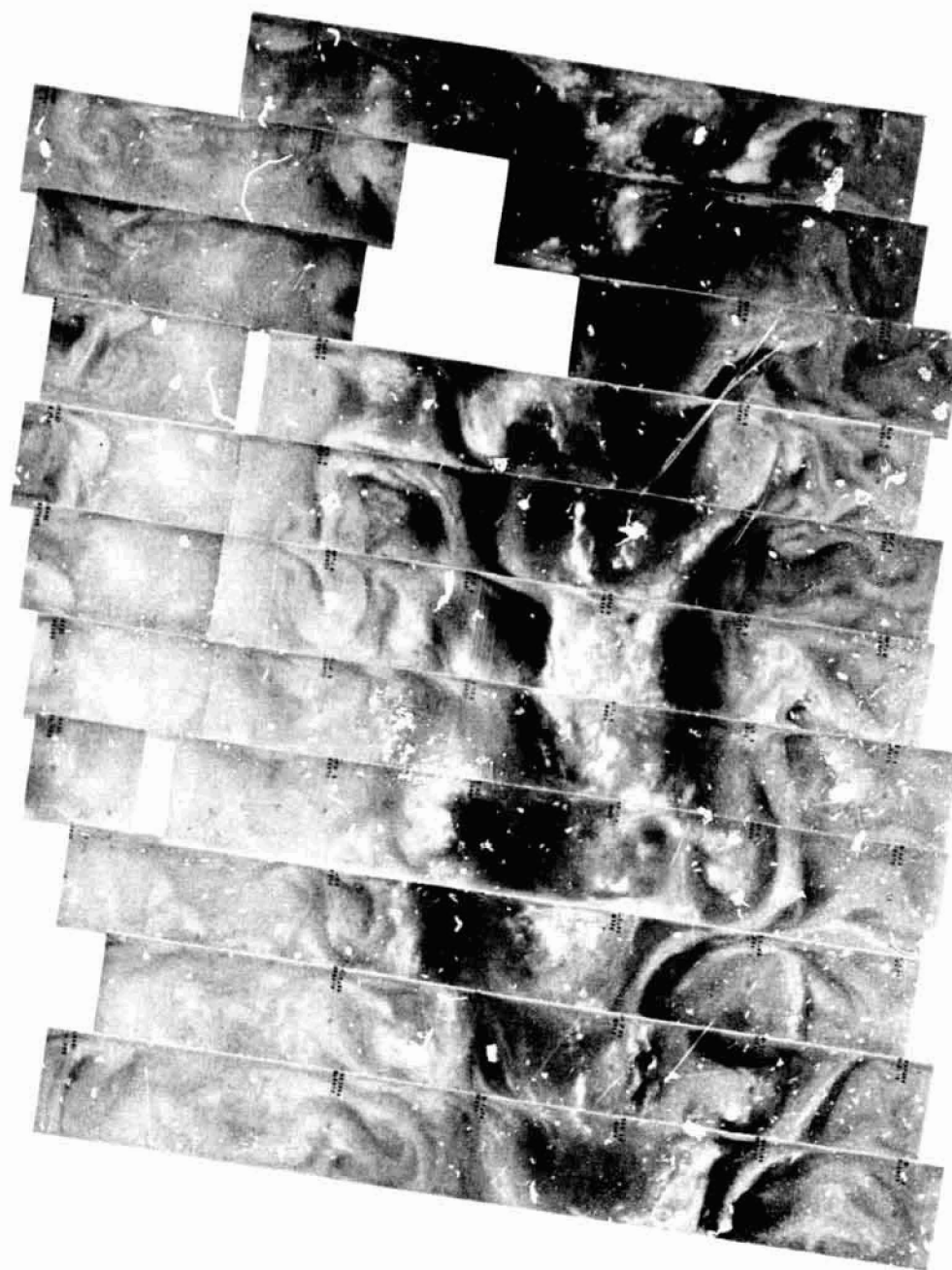
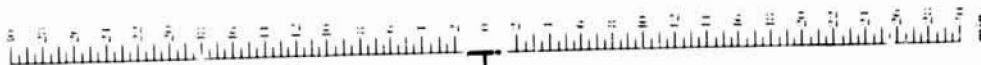
23 DECEMBER 1972

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-12

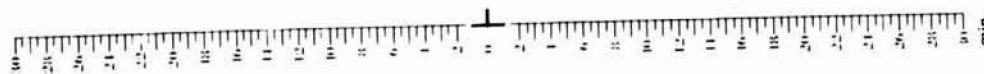
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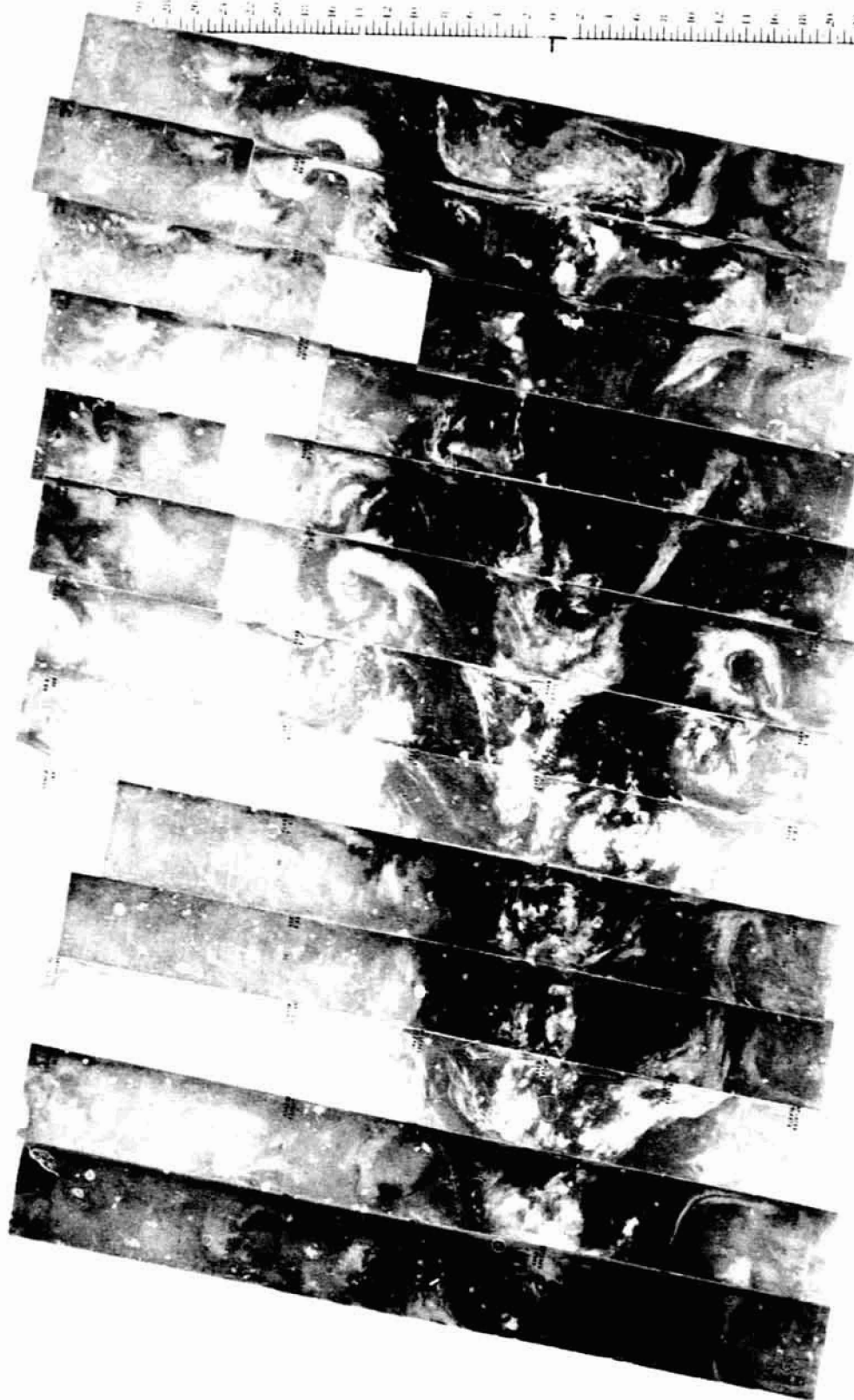


170 169 168 167 166 165 164 163 162 161 160 159 158

23 DECEMBER 1972

6.7 μ m

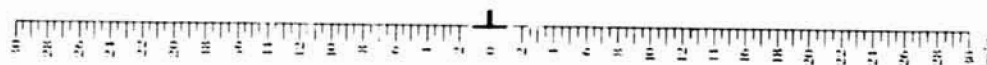




183 182 181 180 179 178 177 176 175 174 173 172 171

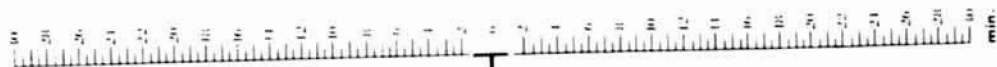
24 DECEMBER 1972

11.5 μ m



4-14

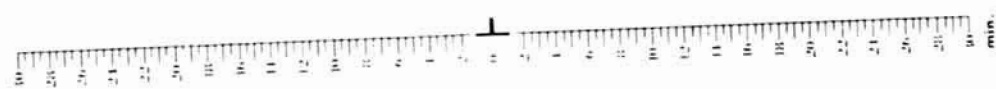
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171 172 173 174 175 176 177 178 179 180 181 182 183

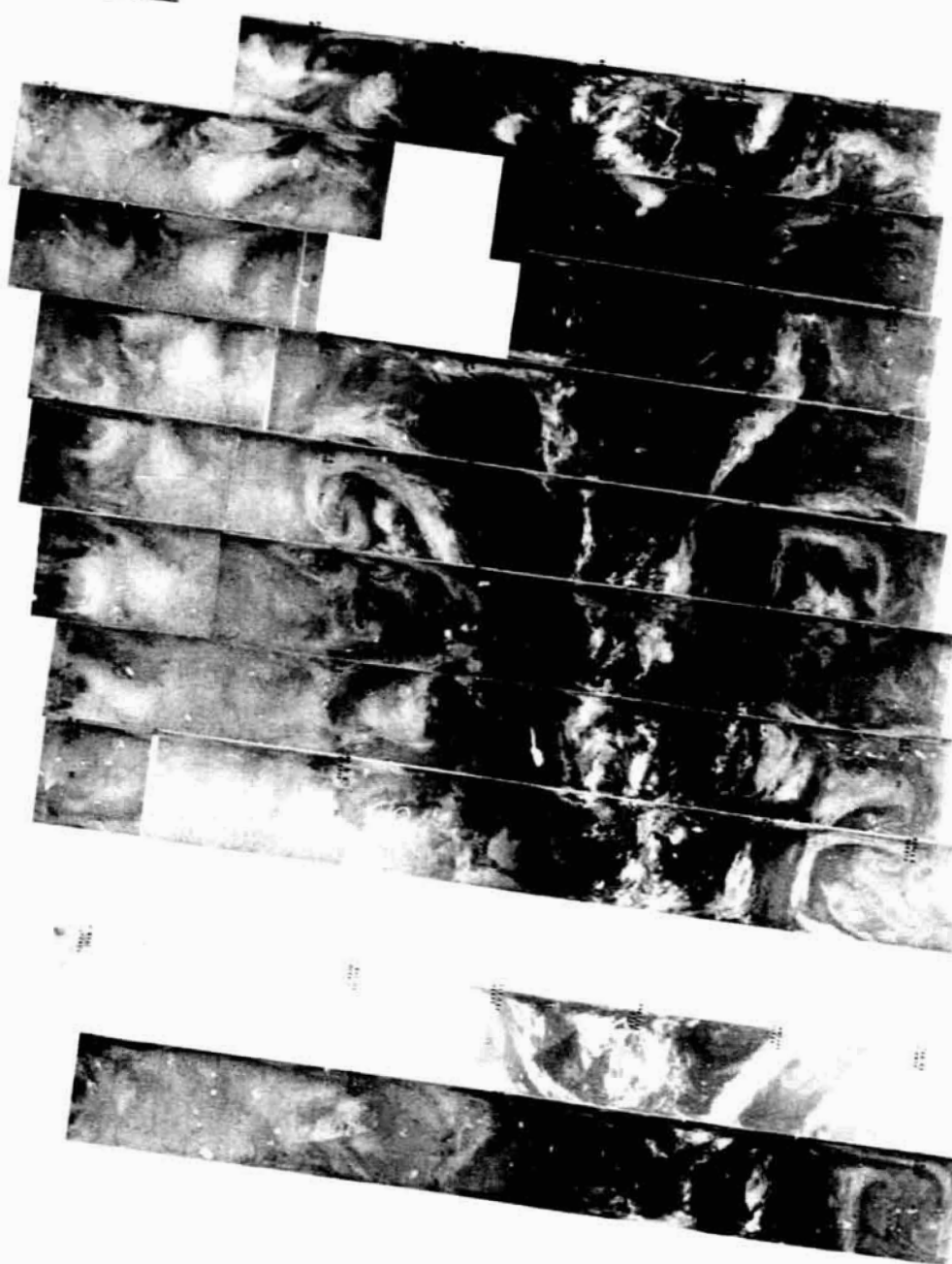
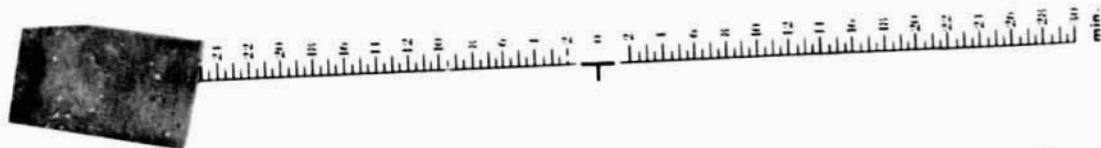
24 DECEMBER 1972

6.7 μ m



4-15

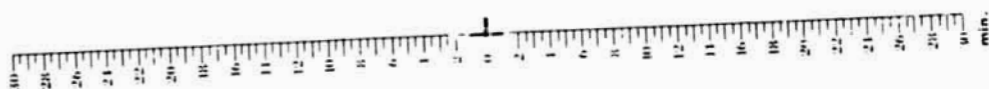
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197 196 195 194 193 192 191 190 189 188 187 186 185 184

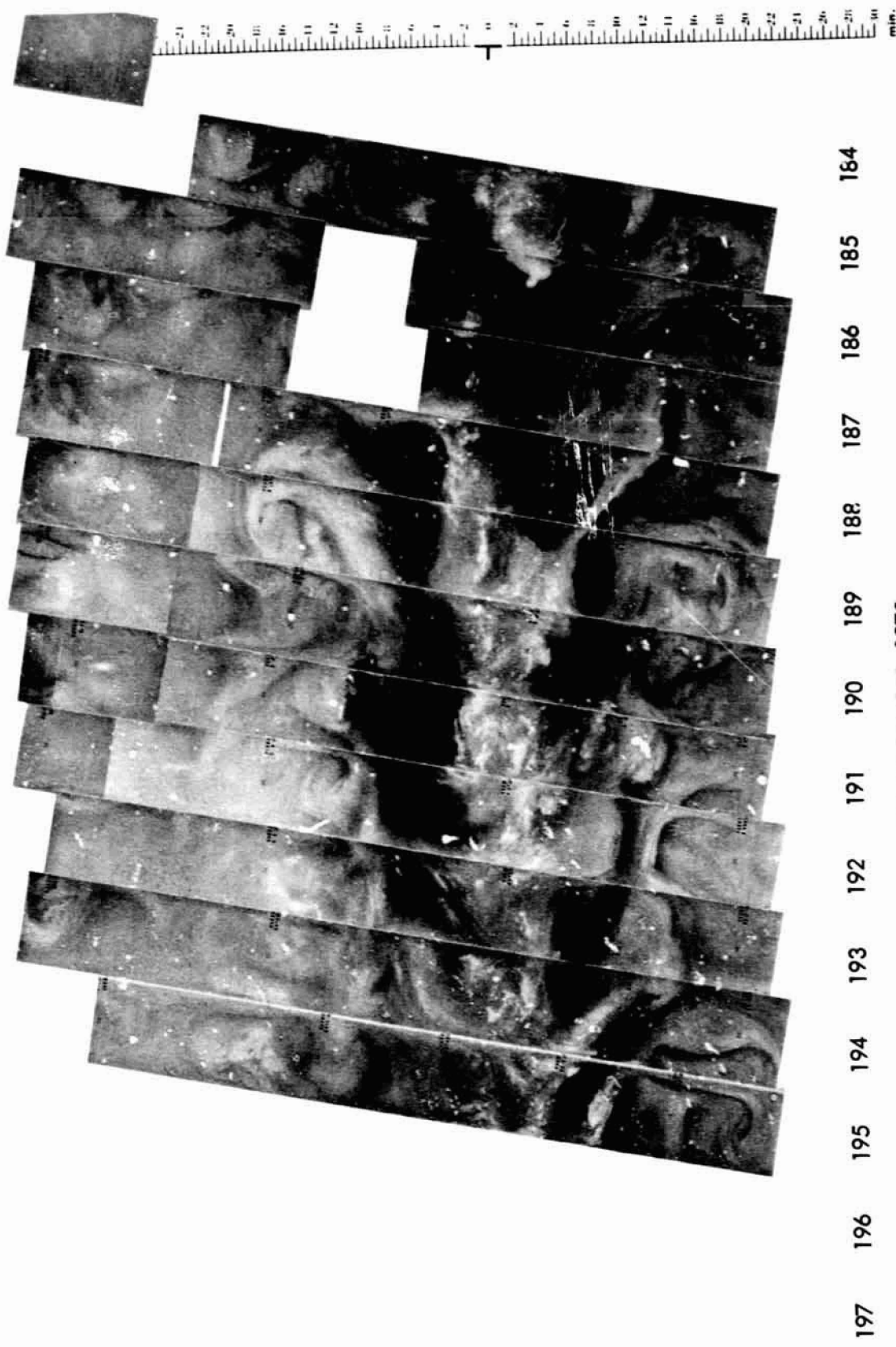
25 DECEMBER 1972

11.5 μ m



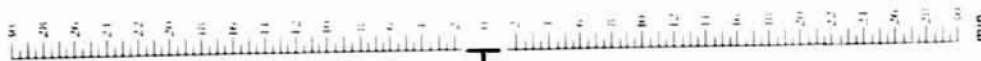
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4-17



25 DECEMBER 1972

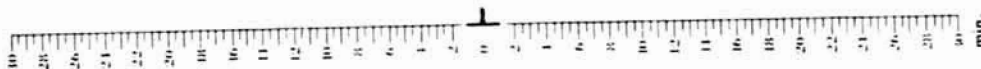
6.7 μ m



210 209 208 207 206 205 204 203 202 201 200 199 198

26 DECEMBER 1972

11.5 μ m



4-18

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



210 209 208 207 206 205 204 203 202 201 200 199 198

26 DECEMBER 1972

6.7 μ m



min.



211 212 213 214 215 216 217 218 219 220 221 222 223 224

27 DECEMBER 1972

11.5 μ m

min.

4-20

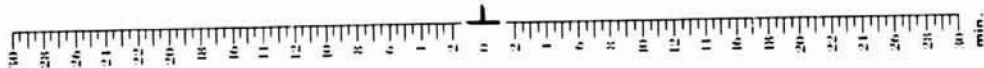
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211 212 213 214 215 216 217 218 219 220 221 222 223 224

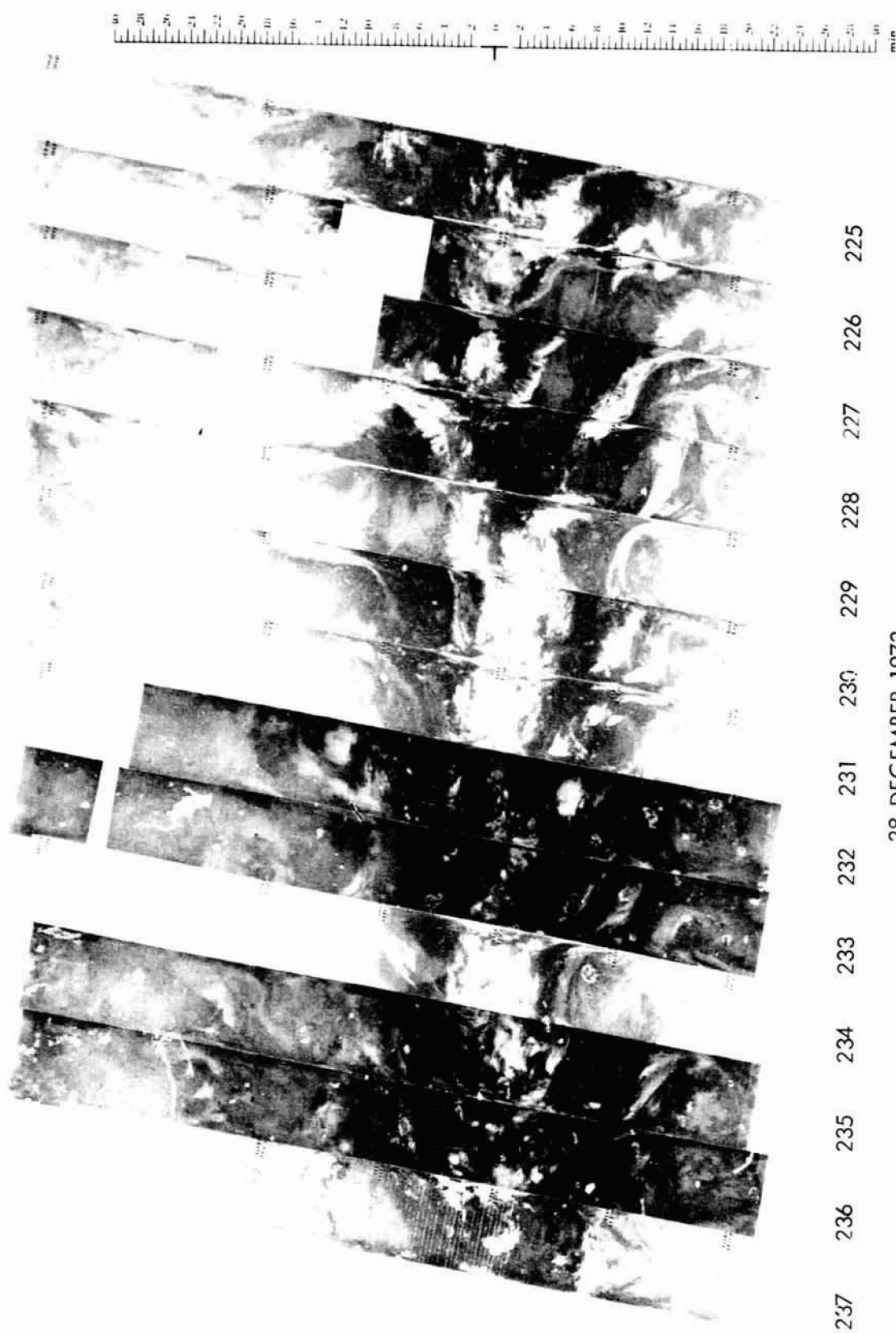
27 DECEMBER 1972

6.7 μ m



4-21

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



28 DECEMBER 1972

11.5 μ m

min.



225

226

227

228

229

230

231

232

233

234

235

236

237

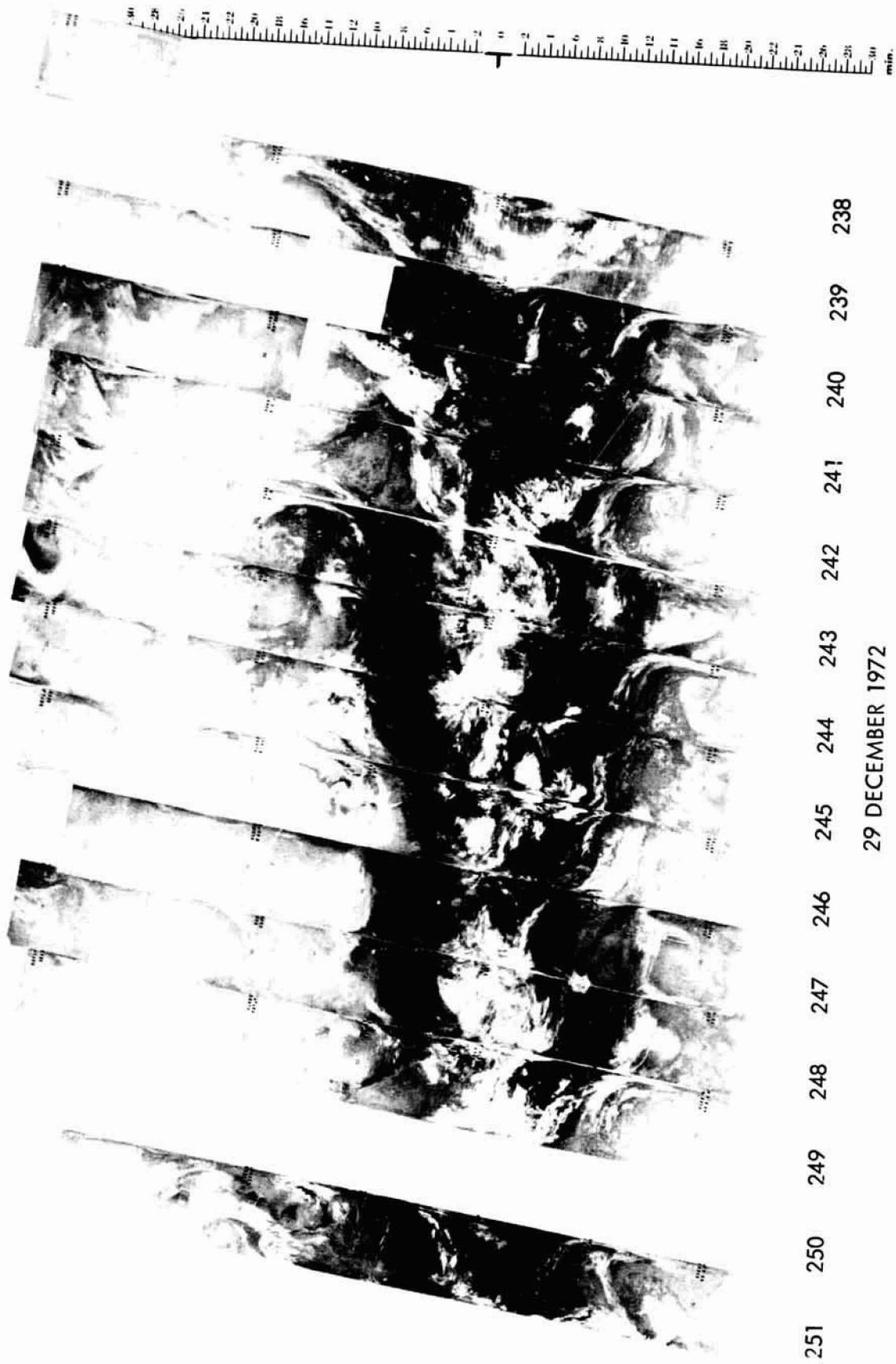
28 DECEMBER 1972

6.7 μ m

min.

4-23

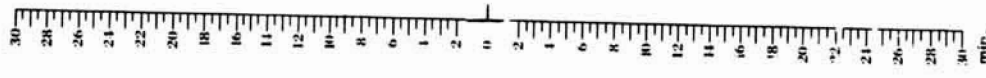
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



251 250 249 248 247 246 245 244 243 242 241 240 239 238

29 DECEMBER 1972

11.5 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 min.



251 250 249 248 247 246 245 244 243 242 241 240 239 238

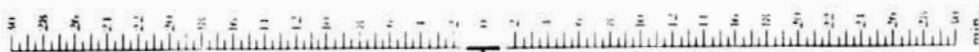
29 DECEMBER 1972

6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 min.

4-25

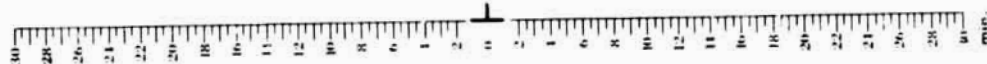
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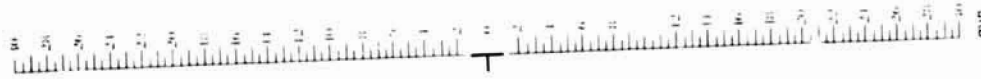


264 263 262 261 260 259 258 257 256 255 254 253 252

30 DECEMBER 1972

11.5 μ m





252

253

254

255

256

257

258

259

260

261

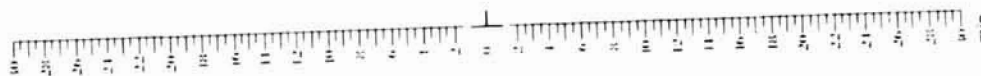
262

263

264

30 DECEMBER 1972

6.7 μ m

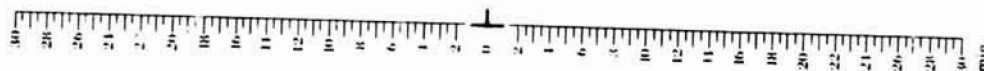
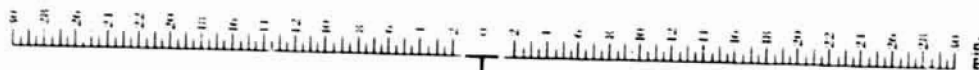


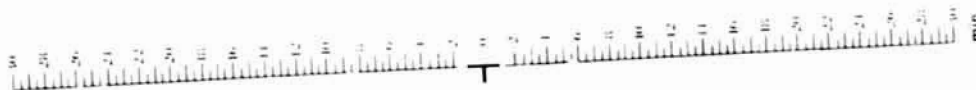


277 276 275 274 273 272 271 270 269 268 267 266 265

31 DECEMBER 1972

11.5 μ m





265

266

267

268

269

270

271

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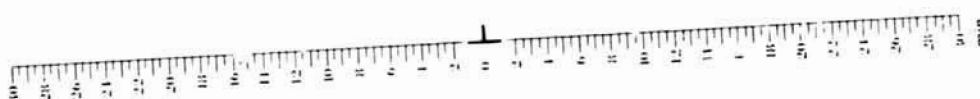
275

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31 DECEMBER 1972

6.7 μ m



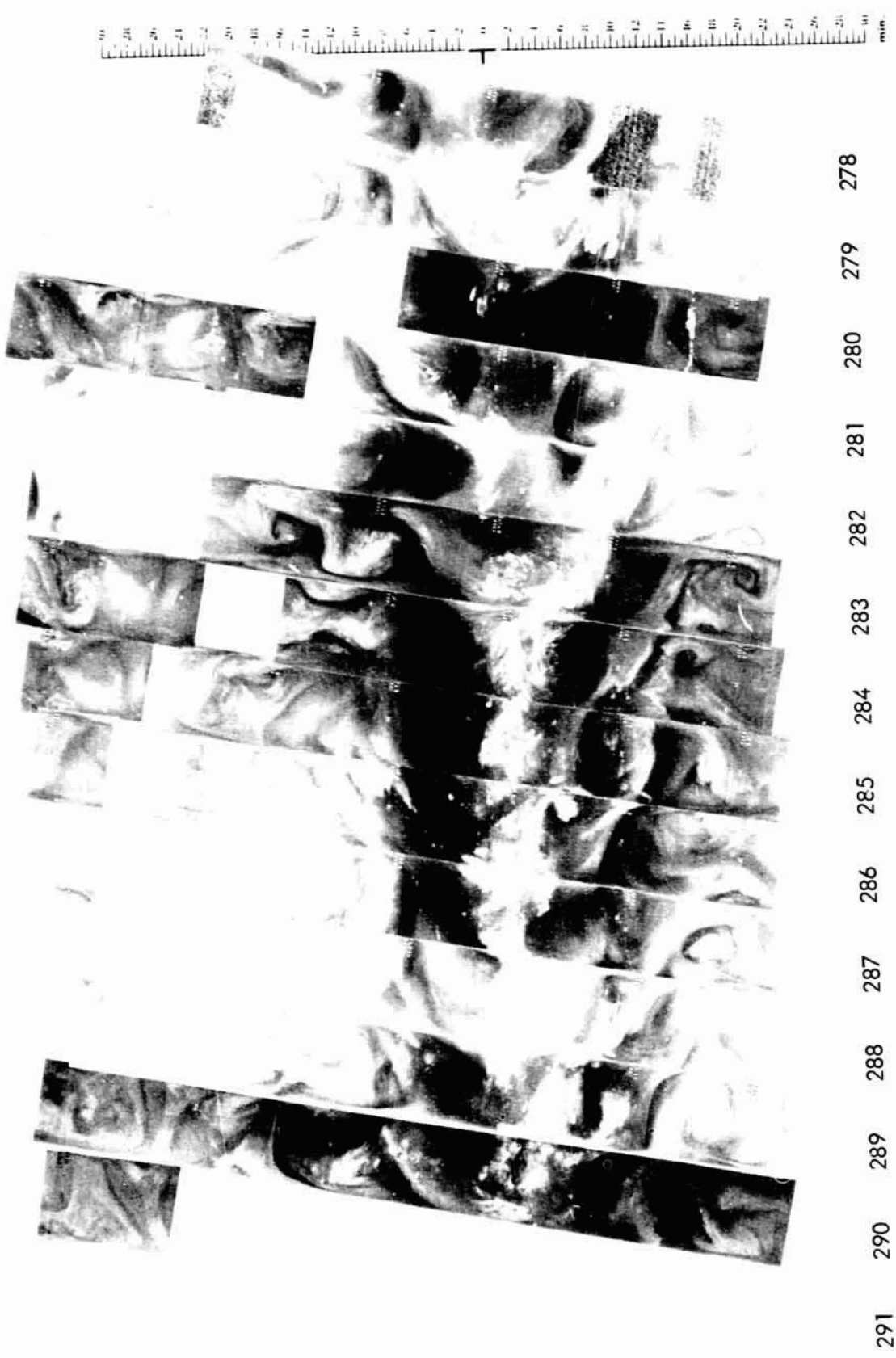


291 290 289 288 287 286 285 284 283 282 281 280 279 278

1 JANUARY 1973

11.5 μ m

4-30



278

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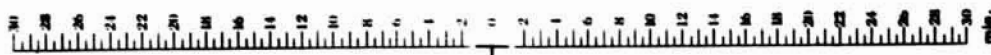
289

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291

1 JANUARY 1973

6.7 μ m



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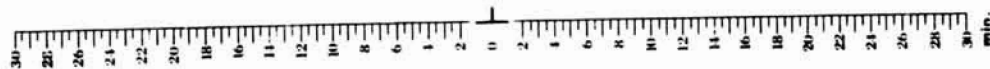
302

303

304

2 JANUARY 1973

11.5 μ m



30 25 20 15 10 5 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 30 min.



292

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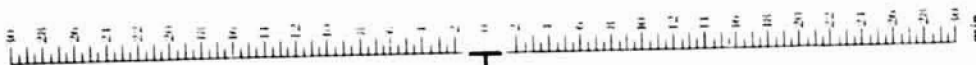
2 JANUARY 1973

6.7 μ m

30 25 20 15 10 5 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 30 min.

4-33

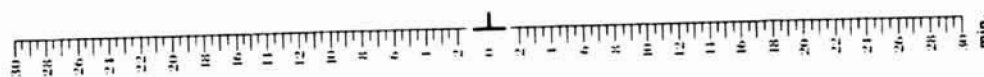
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318 317 316 315 314 313 312 311 310 309 308 307 306 305

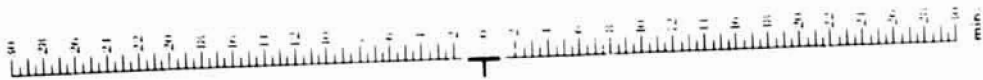
3 JANUARY 1973

11.5 μ m



4-34

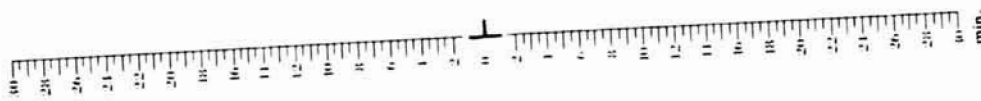
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318 317 316 315 314 313 312 311 310 309 308 307 306 305

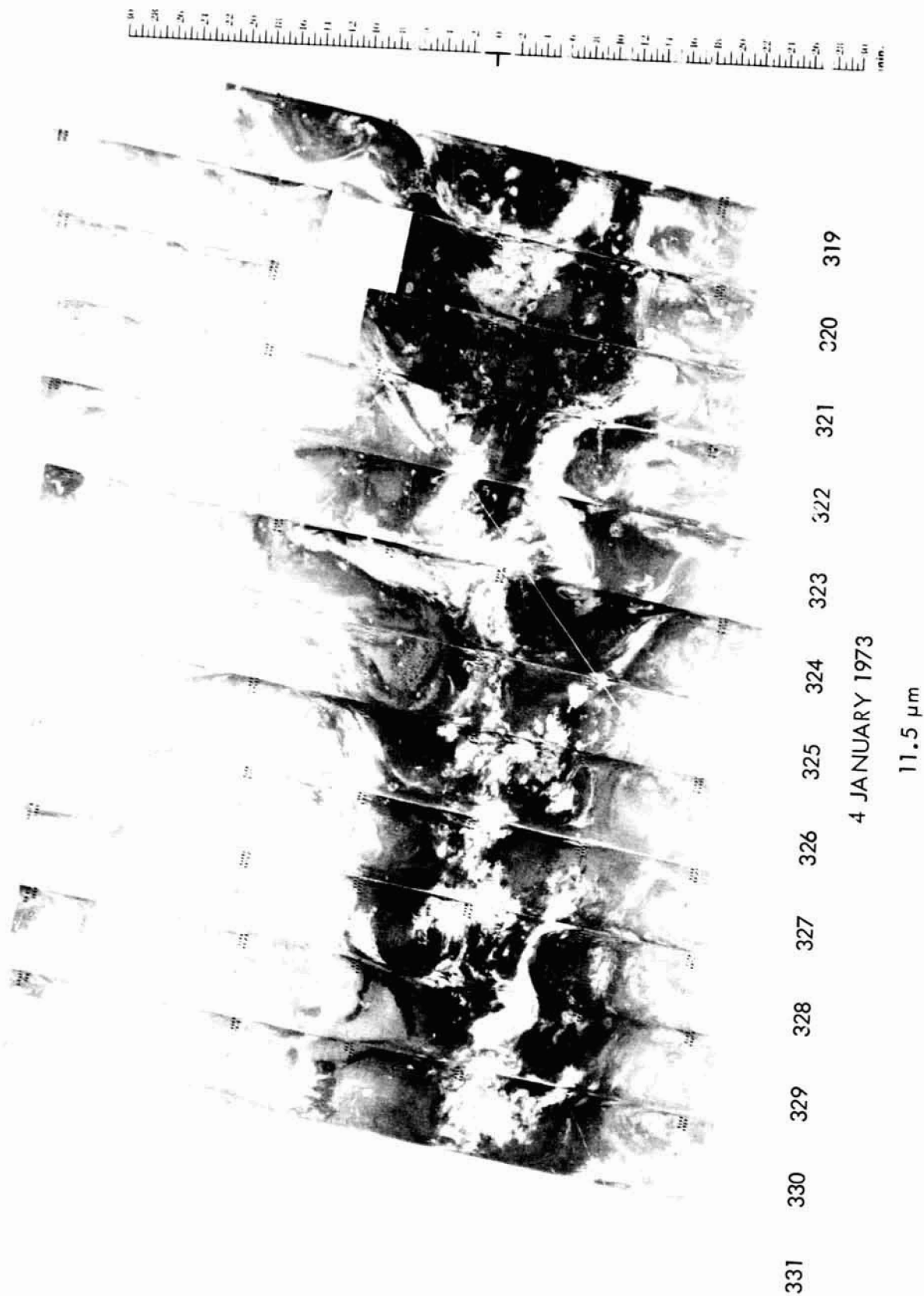
3 JANUARY 1973

6.7 μ m



4-35

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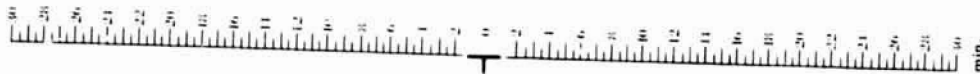


4 JANUARY 1973

11.5 μ m

4-36

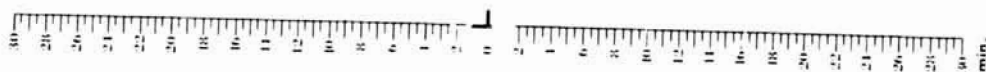
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



331 330 329 328 327 326 325 324 323 322 321 320 319

4 JANUARY 1973

6.7 μ m



30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.



332 333 334 335 336 337 338 339 340 341 342 343 344

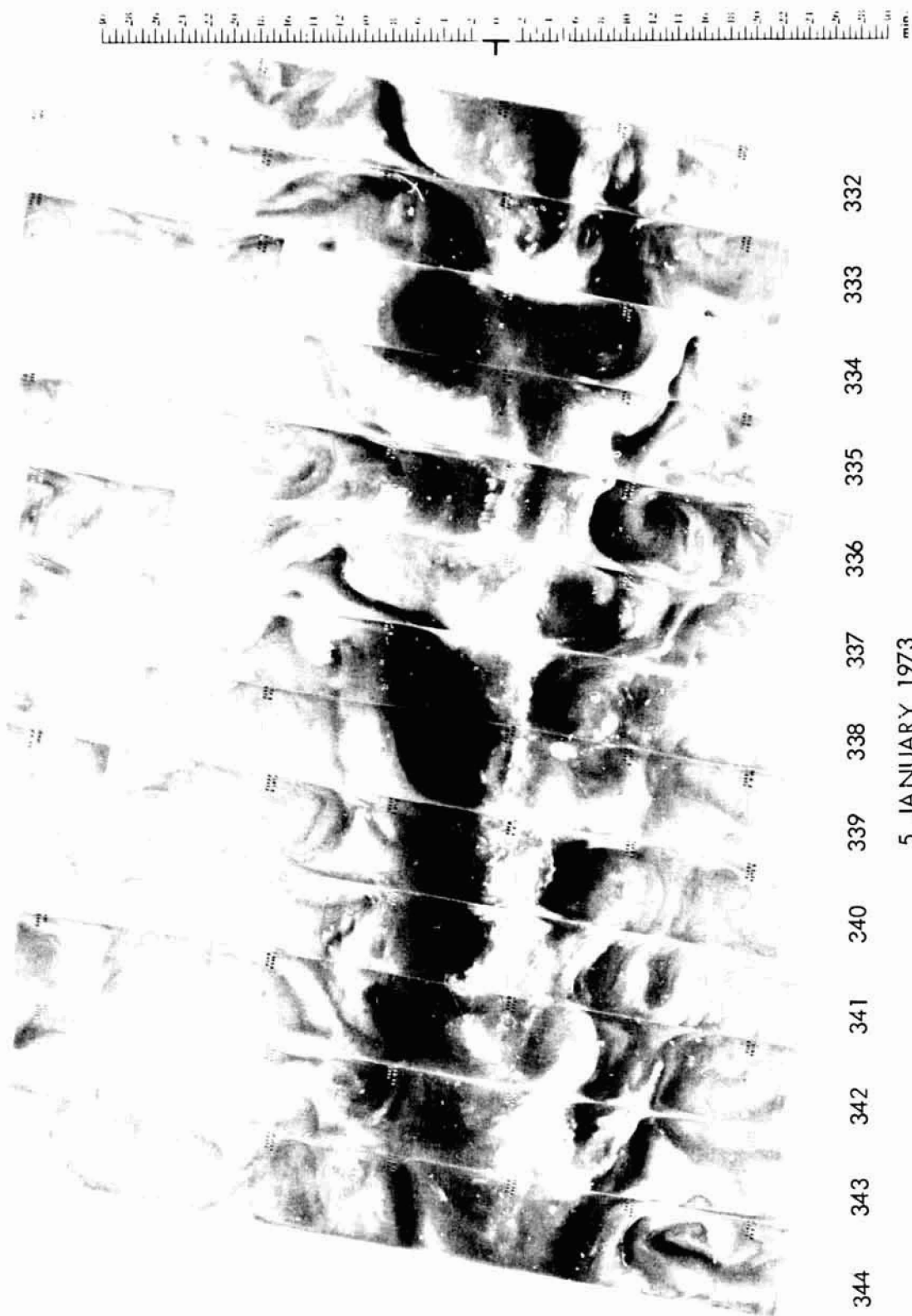
5 JANUARY 1973

11.5 μ m

30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.

4-38

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



6.7 μ m

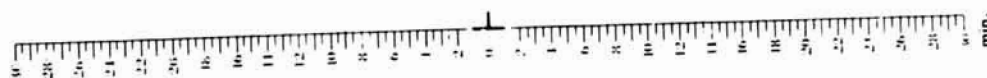
5 JANUARY 1973



358 357 356 355 354 353 352 351 350 349 348 347 346 345

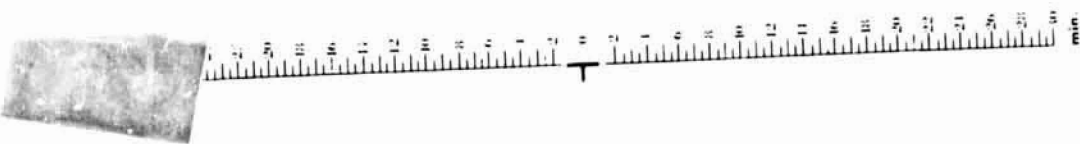
6 JANUARY 1973

11.5 μ m



4-40

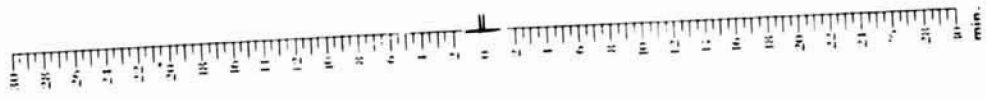
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



358 357 356 355 354 353 352 351 350 349 348 347 346 345

6 JANUARY 1973

6.7 μ m



3 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 min



371 370 369 368 367 366 365 364 363 362 361 360 359

7 JANUARY 1973

11.5 μ m

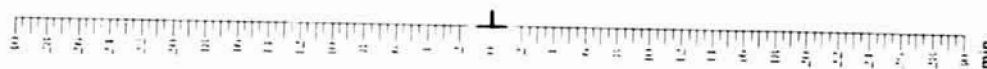
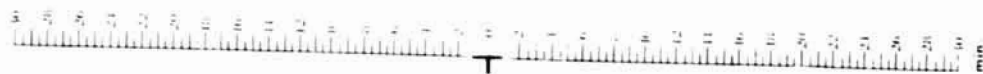
3 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 min



371 370 369 368 367 366 365 364 363 362 361 360 359

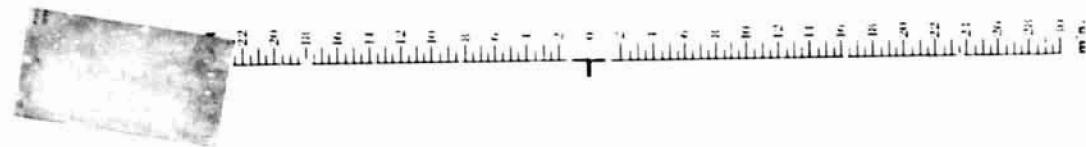
7 JANUARY 1973

6.7 μ m



4-43

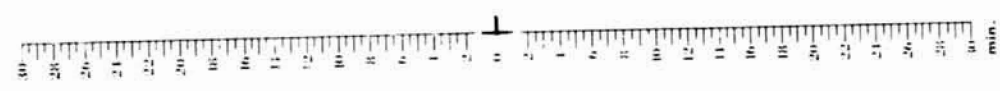
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372 373 374 375 376 377 378 379 380 381 382 383 384 385

8 JANUARY 1973

11.5 μ m



4-44

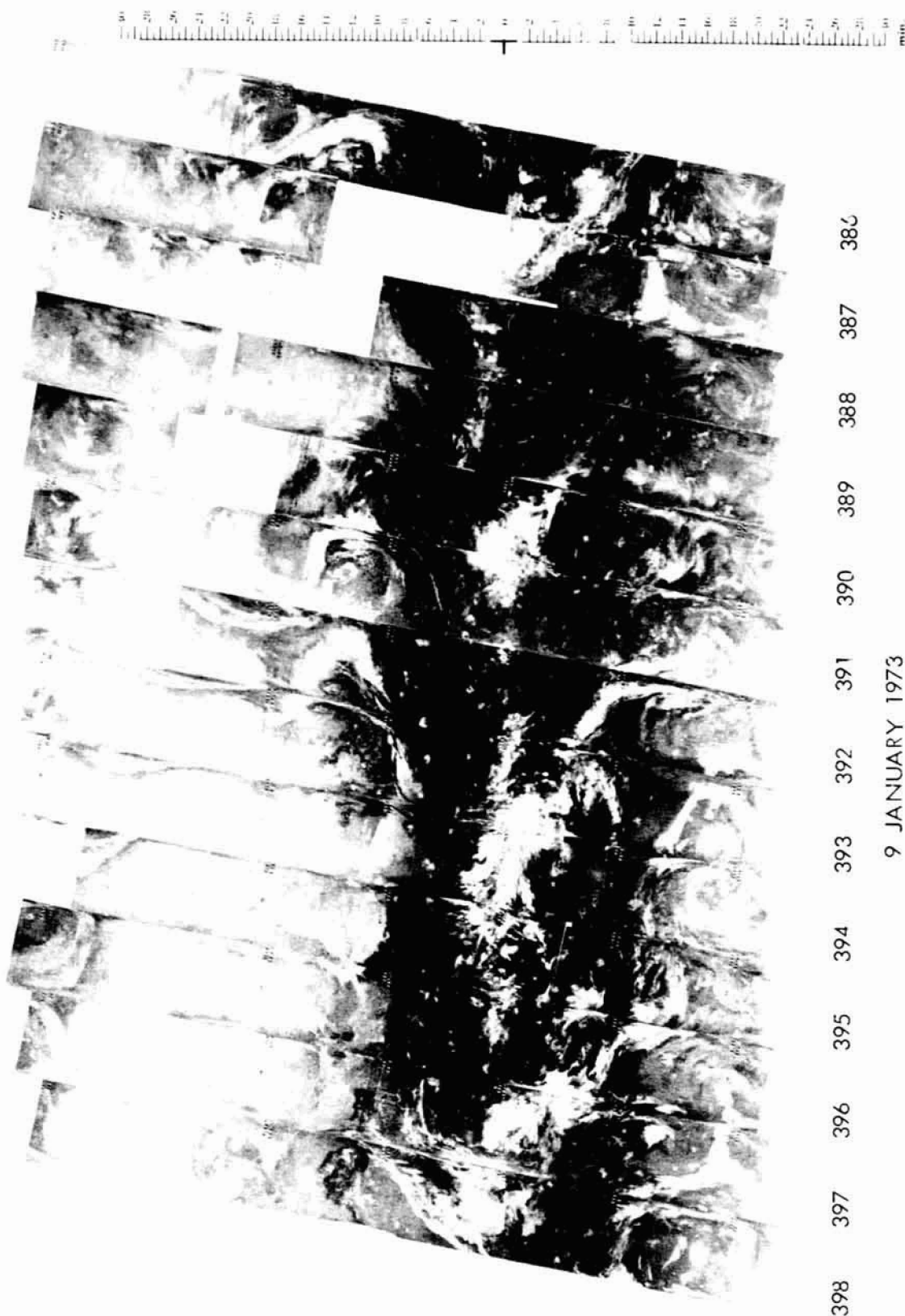
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8 JANUARY 1973

6.7 μ m

4-45



9 JANUARY 1973

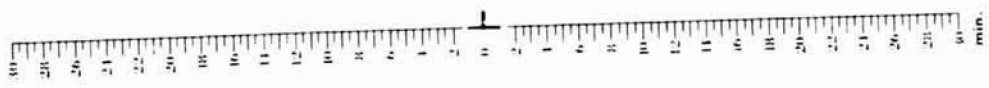
11.5 μ m



398 397 396 395 394 393 392 391 390 389 388 387 386

9 JANUARY 1973

6.7 μ m



4-47

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



10 JANUARY 1973

11.5 μ m



399 400 401 402 403 404 405 406 407 408 409 410 411 412

10 JANUARY 1973

6.7 μ m

min. 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30

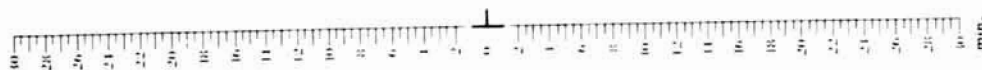
min. 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30



425 424 423 422 421 420 419 418 417 416 415 414 413

11 JANUARY 1973

11.5 μm



4-50

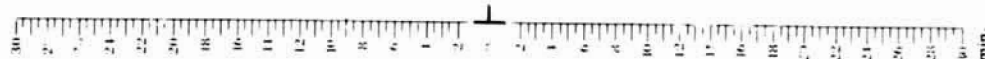
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



425 424 423 422 421 420 419 418 417 416 415 414 413

11 JANUARY 1973

6.7 μ m



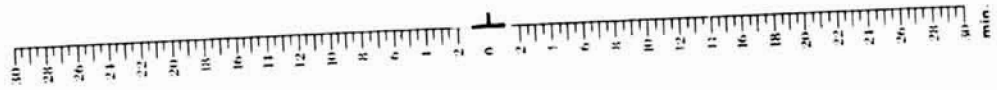
4-51

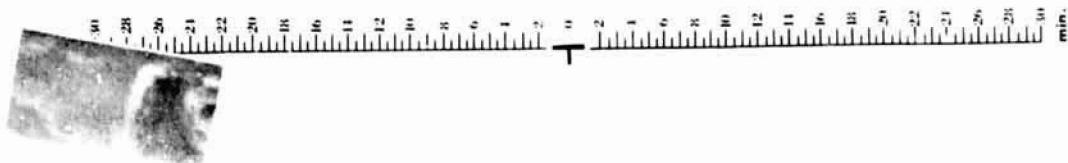


438 437 436 435 434 433 432 431 430 429 428 427 426

12 JANUARY 1973

11.5 μ m





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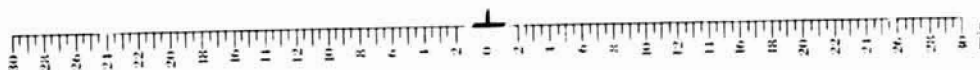
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437

438

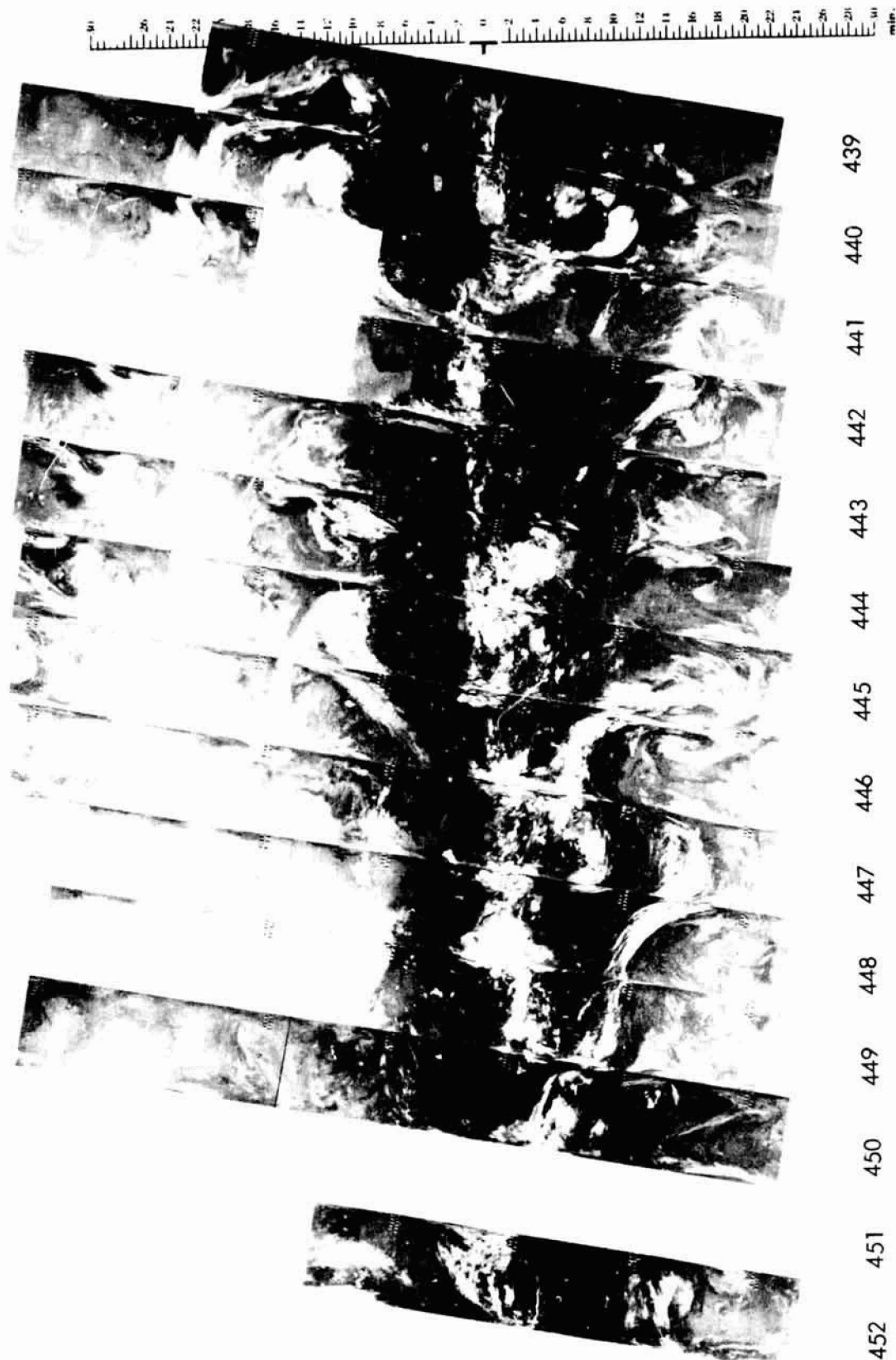
12 JANUARY 1973

6.7 μ m



4-53

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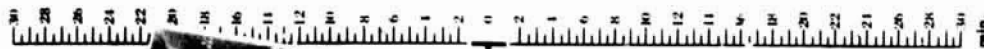
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13 JANUARY 1973

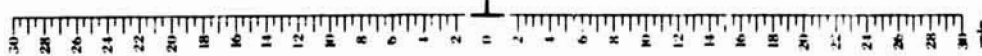
11.5 μ m



439 440 441 442 443 444 445 446 447 448 449 450 451 452

13 JANUARY 1973

6.7 μ m



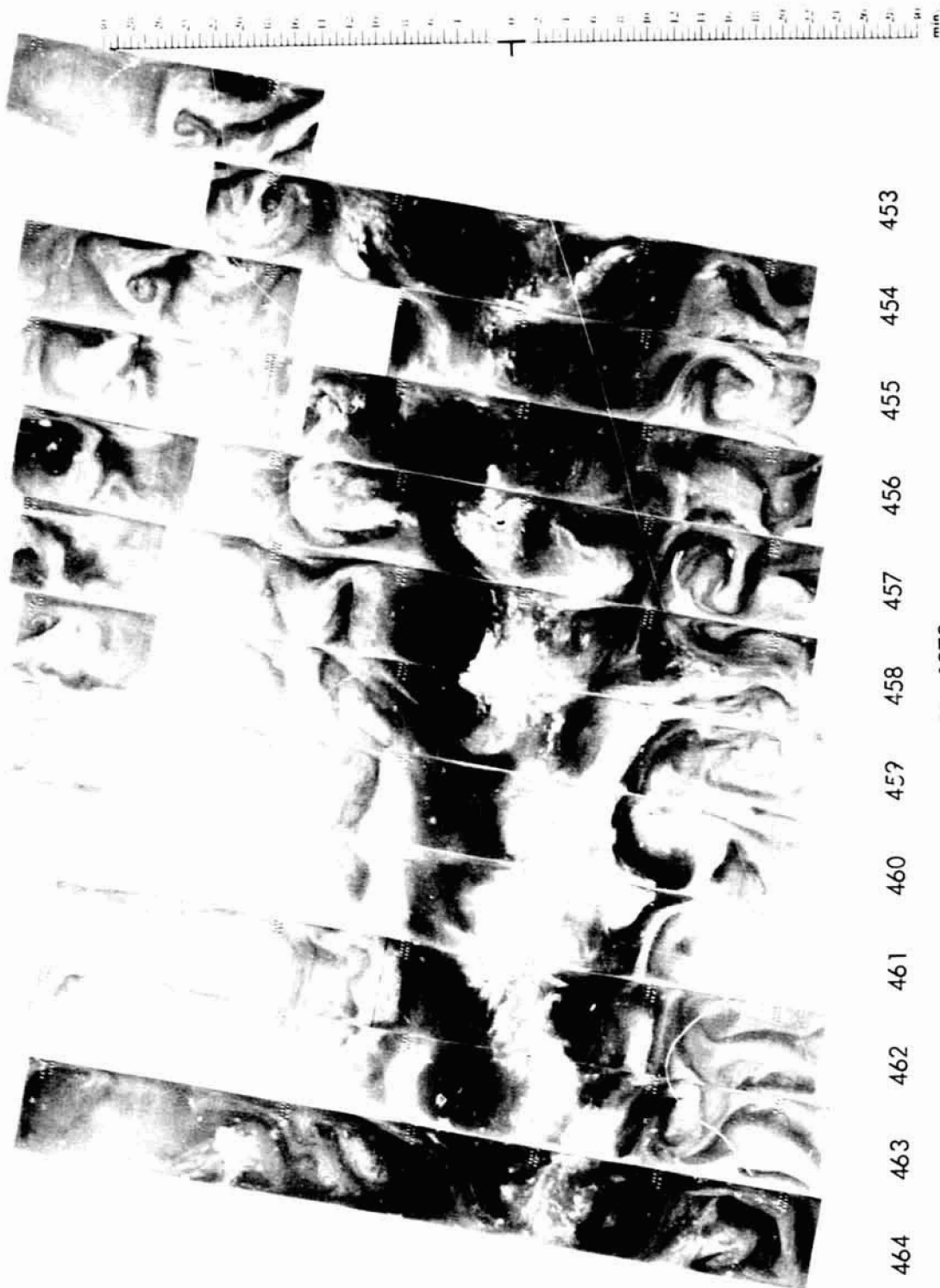
4-55



465 464 463 462 461 460 459 458 457 456 455 454 453

14 JANUARY 1973

11.5 μ m



465 464 463 462 461 460 459 458 457 456 455 454 453

14 JANUARY 1973

6.7 μ m



479 478 477 476 475 474 473 472 471 470 469 468 467 466

15 JANUARY 1973

11.5 μ m



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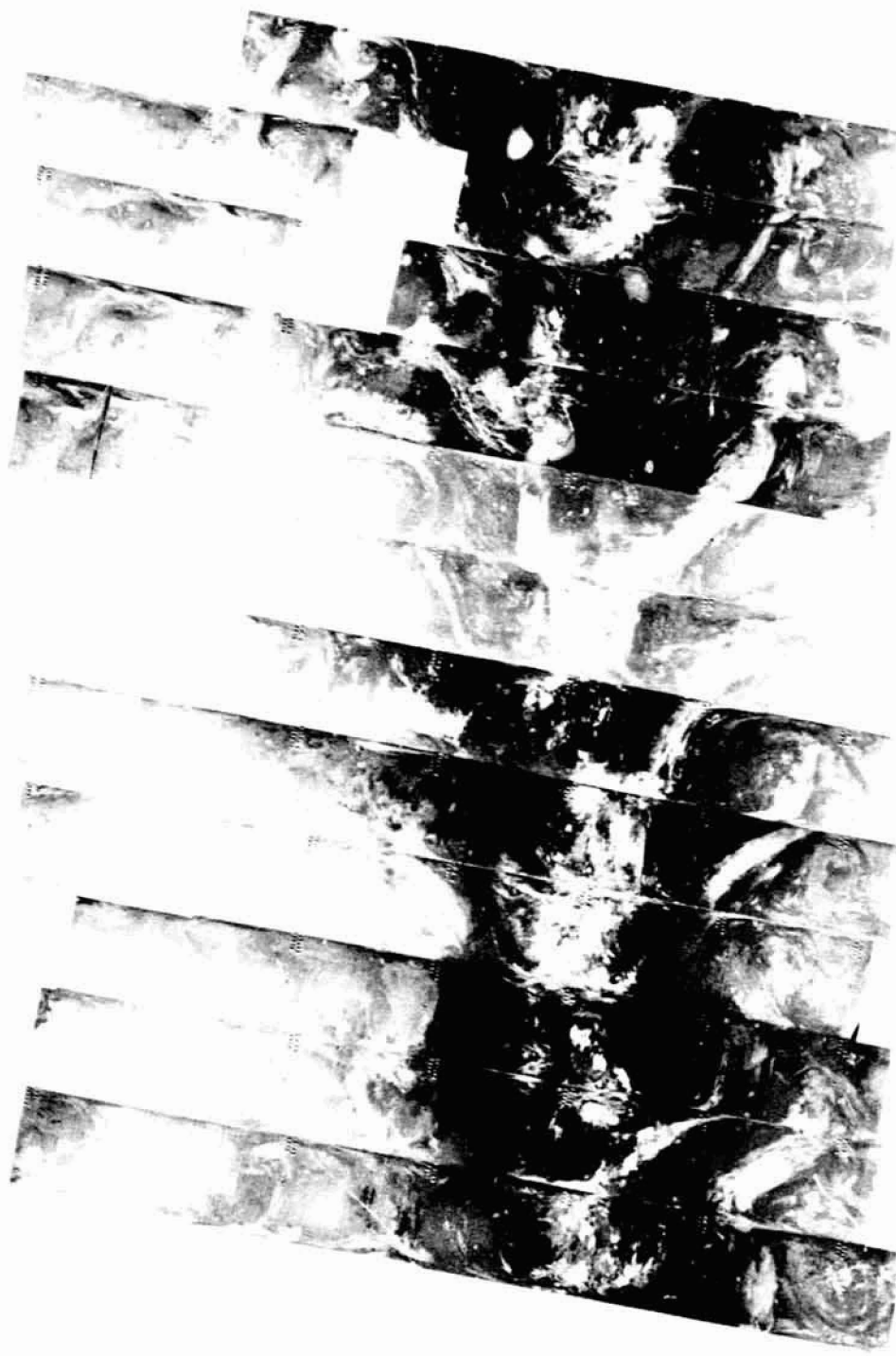
479

15 JANUARY 1973

6.7 μ m

4-59

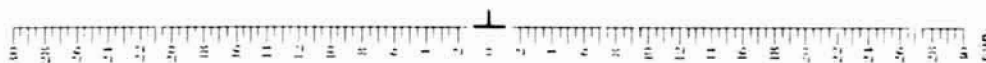
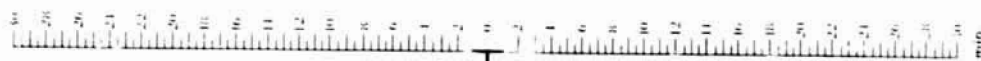
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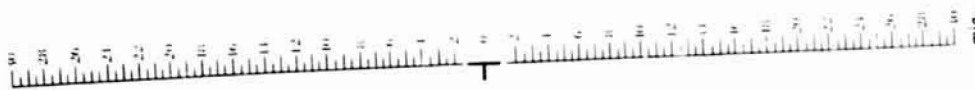


492 491 490 489 488 487 486 485 484 483 482 481 480

16 JANUARY 1973

11.5 μ m





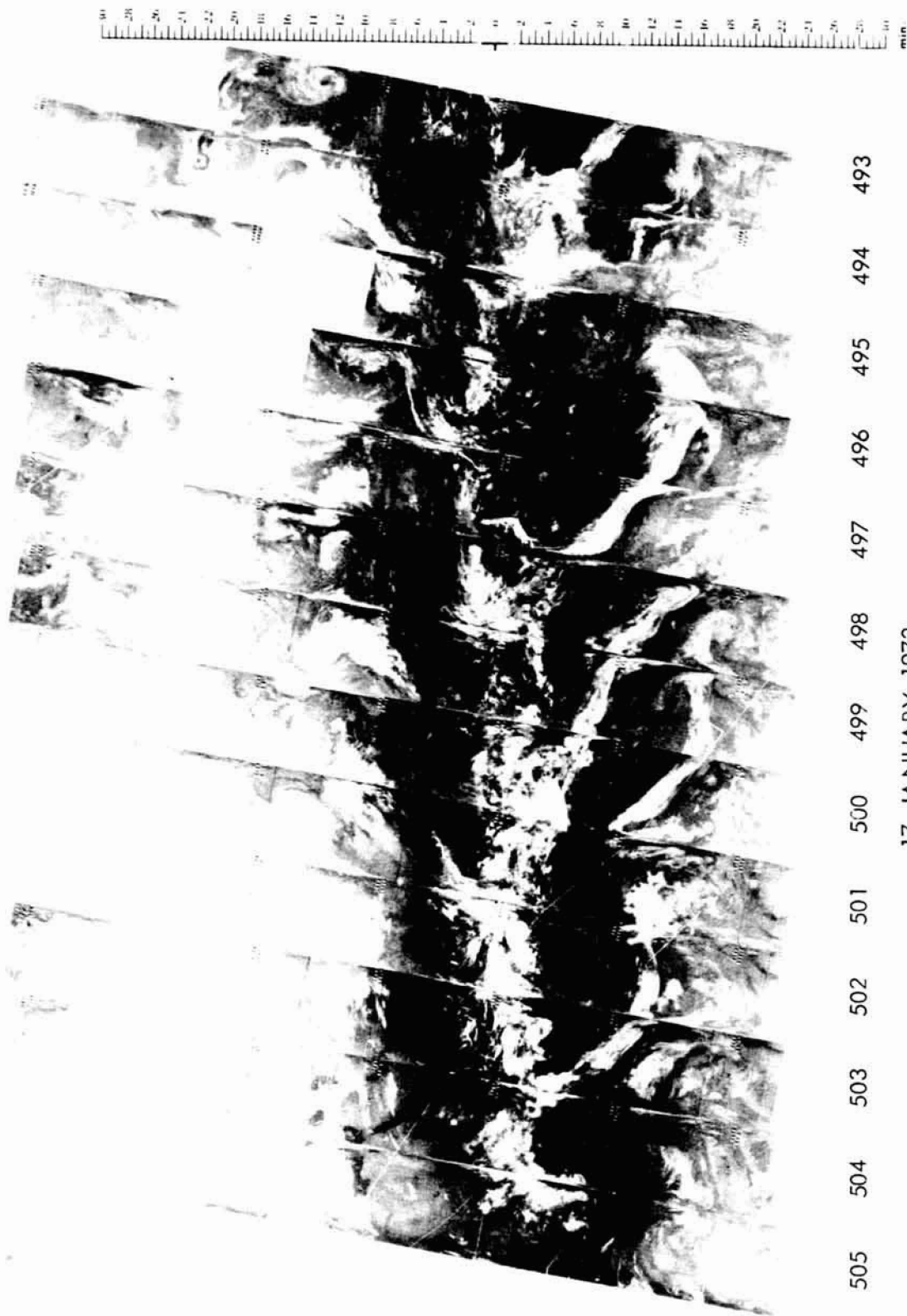
492 491 490 489 488 487 486 485 484 483 482 481 480

16 JANUARY 1973

6.7 μ m



4-01



506 505 504 503 502 501 500 499 498 497 496 495 494 493

17 JANUARY 1973

11.5 μ m



17 JANUARY 1973

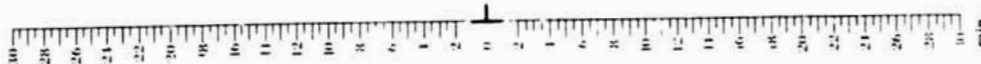
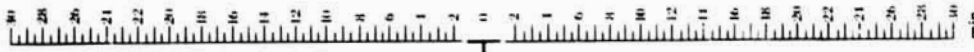
6.7 μ m



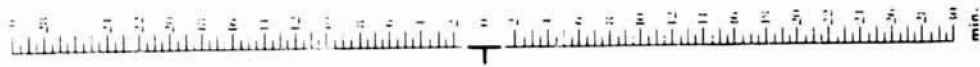
519 518 517 516 515 514 513 512 511 510 509 508 507

18 JANUARY 1973

11.5 μ m



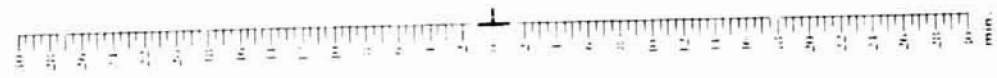
4-64



519 518 517 516 515 514 513 512 511 510 509 508 507

18 JANUARY 1973

6.7 μ m

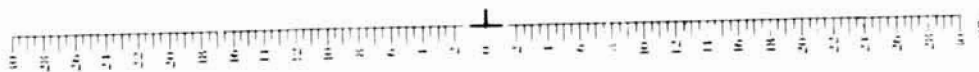
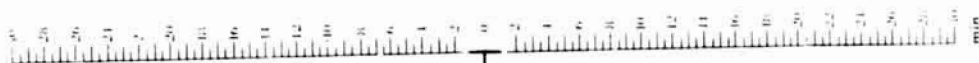




532 531 530 529 528 527 526 525 524 523 522 521 520

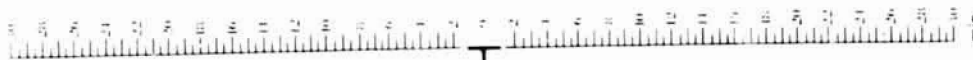
19 JANUARY 1973

11.5 μ m



4-66

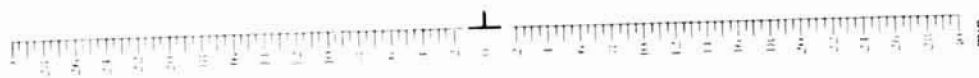
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532 531 530 529 528 527 526 525 524 523 522 521 520

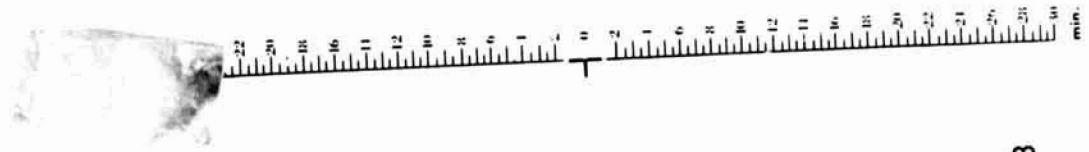
19 JANUARY 1973

6.7 μ m



4-67

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.



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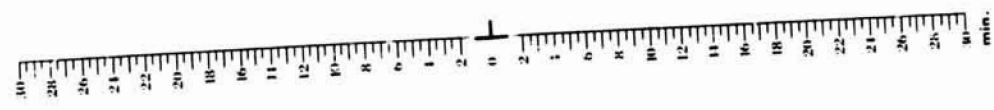
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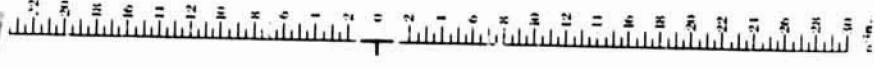
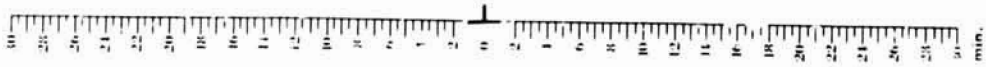
546

20 JANUARY 1973

11.5 μ m



4-69



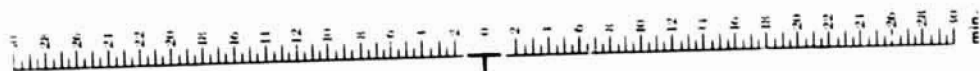
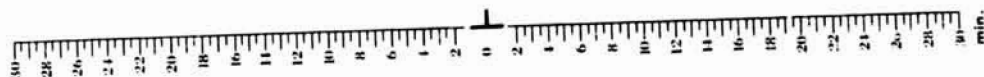
546 545 544 543 542 541 540 539 538 537 536 535 534 533

20 JANUARY 1973

67

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

4-70



559 558 557 556 555 554 553 552 551 550 549 548 547

21 JANUARY 1973

11.5 μ m

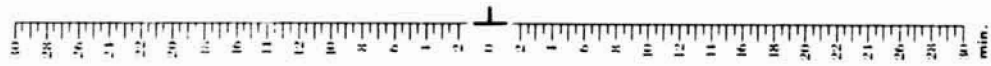
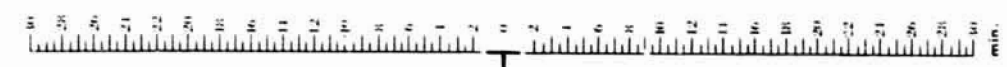
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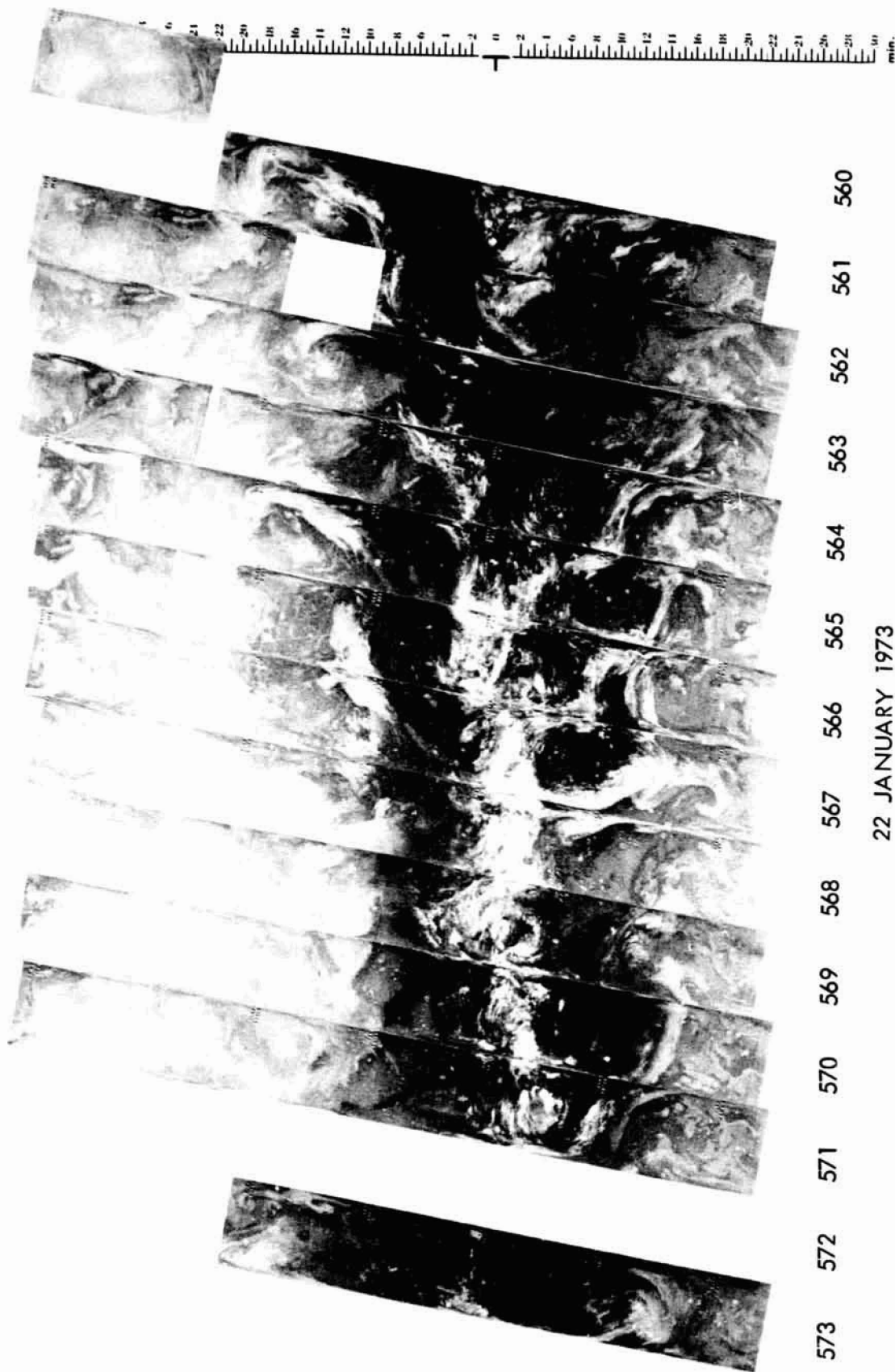


559 558 557 556 555 554 553 552 551 550 549 548 547

21 JANUARY 1973

6.7 μ m



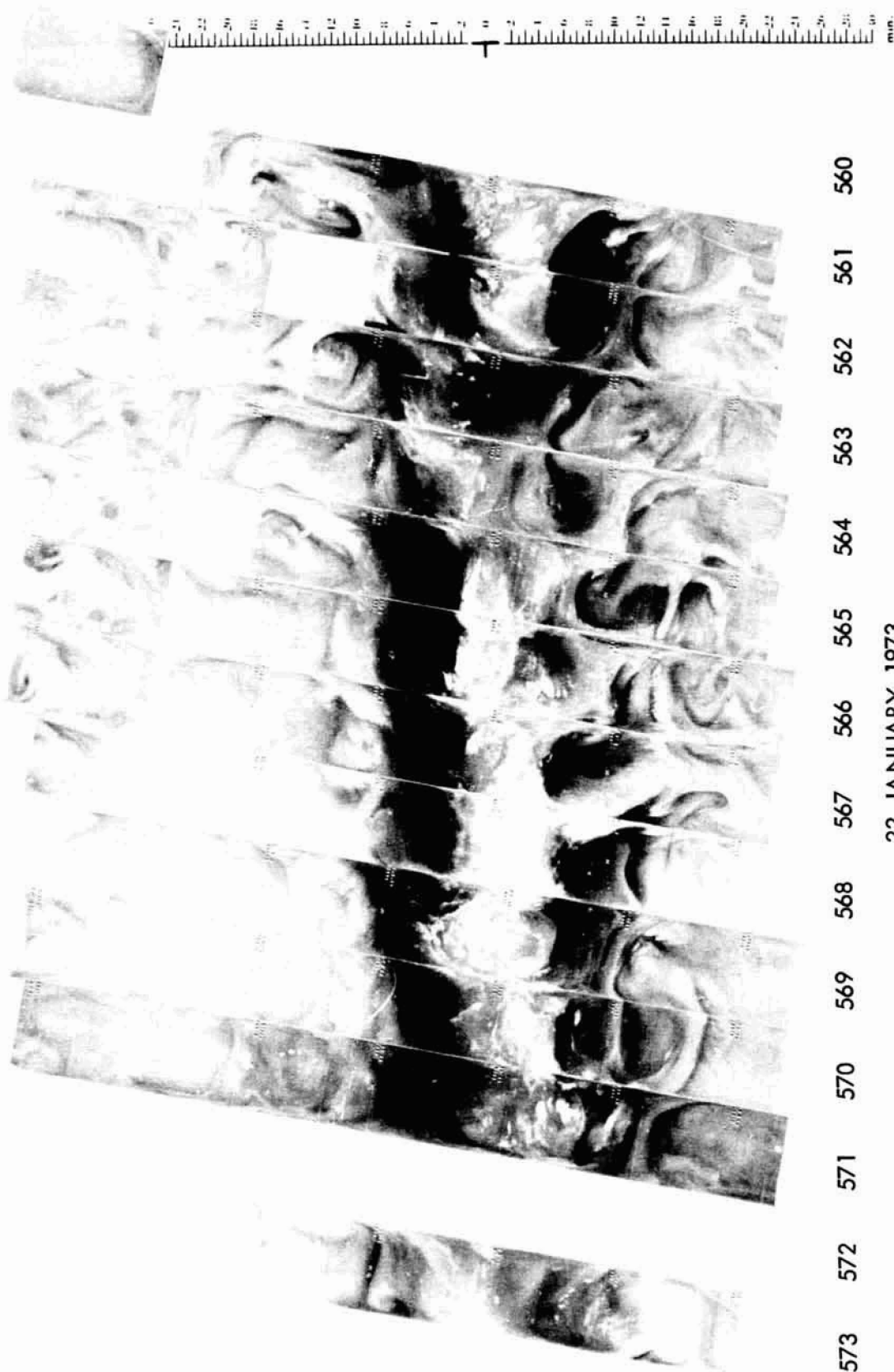


22 JANUARY 1973

11.5 μ m

4-72

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.



4-73



586 585 584 583 582 581 580 579 578 577 576 575 574

23 JANUARY 1973

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



586 585 584 583 582 581 580 579 578 577 576 575 574

23 JANUARY 1973

6.7 μ m

4-75

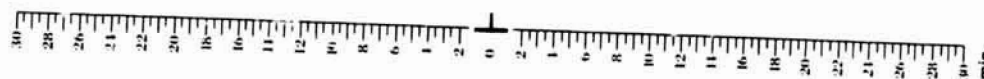
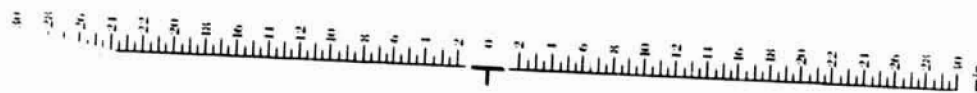
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600 599 598 597 596 595 594 593 592 591 590 589 588 587

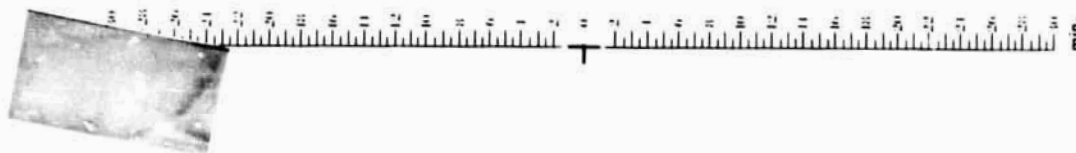
24 JANUARY 1973

11.5 μ m



4-76

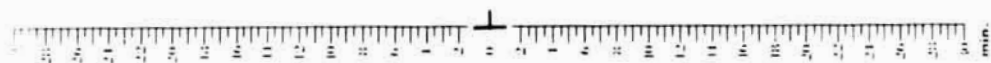
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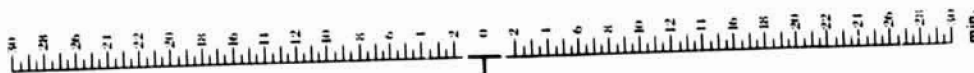


600 599 598 597 596 595 594 593 592 591 590 589 588 587

24 JANUARY 1973

6.7 μ m

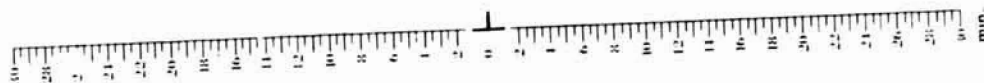


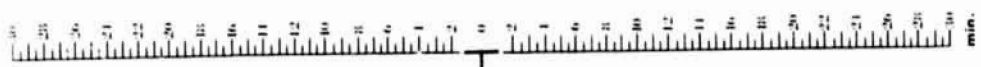


613 612 611 610 609 608 607 606 605 604 603 602 601

25 JANUARY 1973

11.5 μ m

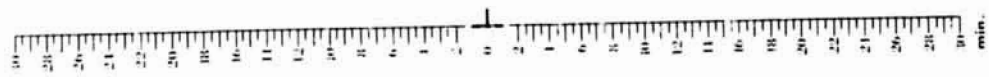




601 602 603 604 605 606 607 608 609 610 611 612 613

25 JANUARY 1973

5.7 μ m



30 25 20 15 10 5 0 5 10 15 20 25 30 min.

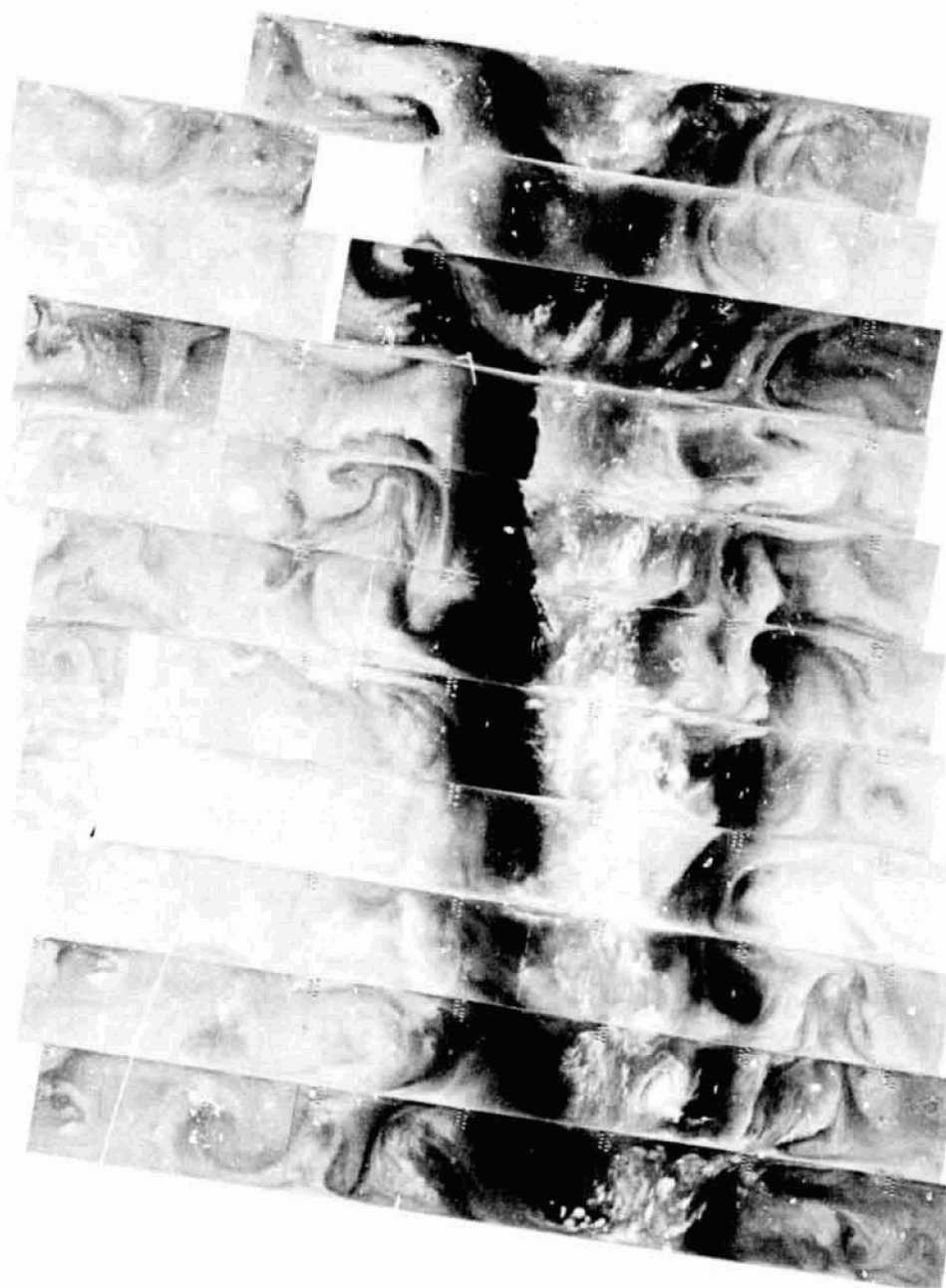
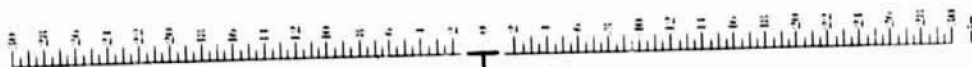


626 625 624 623 622 621 620 619 618 617 616 615 614

26 JANUARY 1973

11.5 μ m

30 25 20 15 10 5 0 5 10 15 20 25 30 min.



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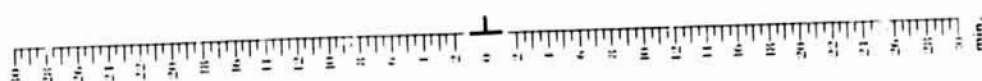
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26 JANUARY 1973

6.7 μ m





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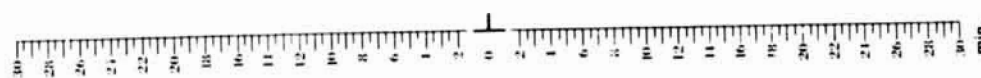
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639

640

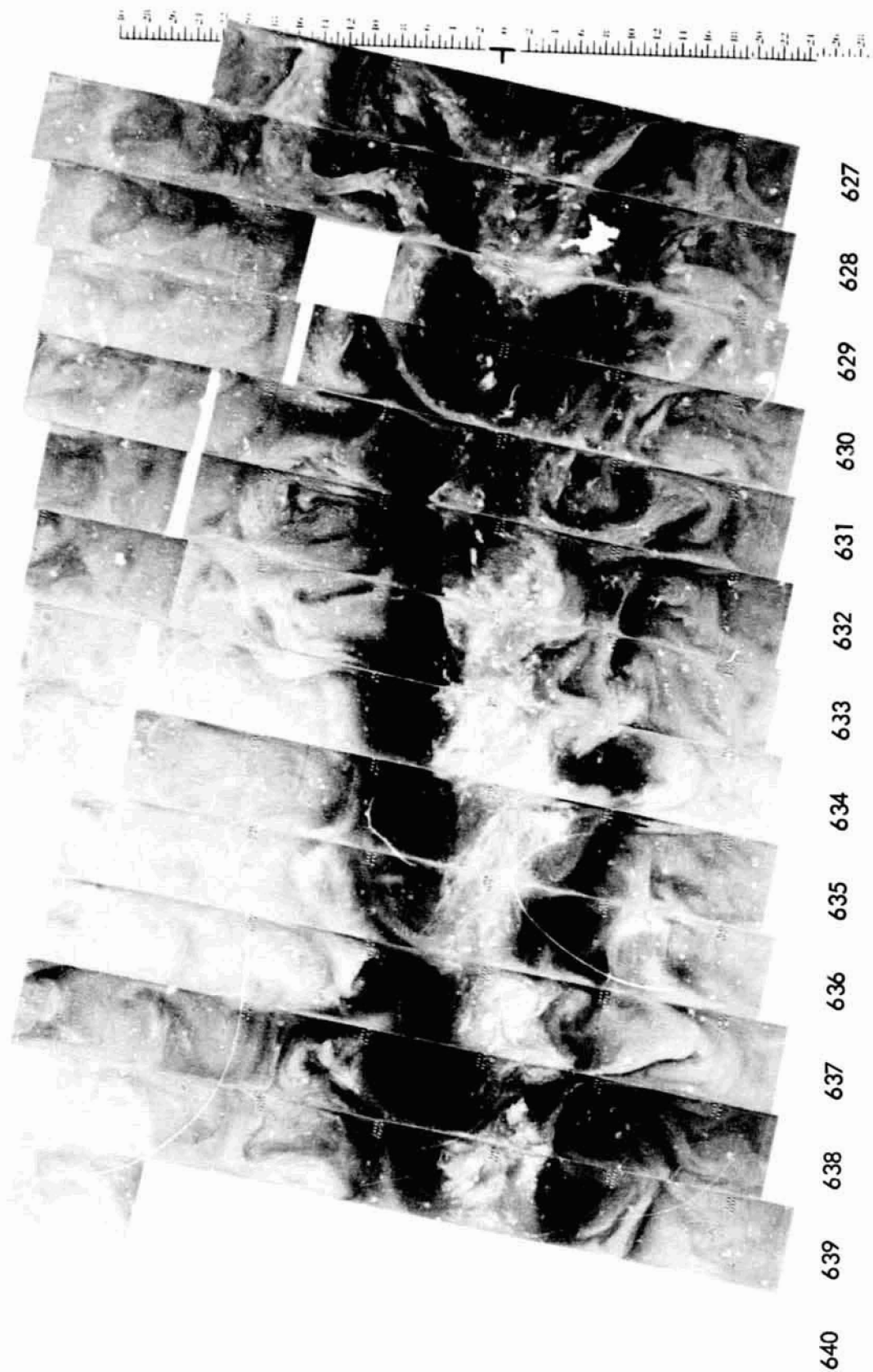
27 JANUARY 1973

11.5 μ m



4-82

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



27 JANUARY 1973

6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

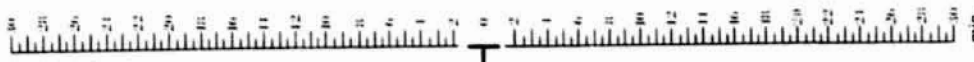


653 652 651 650 649 648 647 646 645 644 643 642 641

28 JANUARY 1973

11.5 μ m

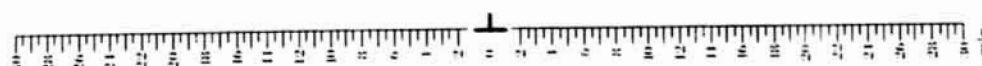
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



653 652 651 650 649 648 647 646 645 644 643 642 641 640

28 JANUARY 1973

6.7 μm



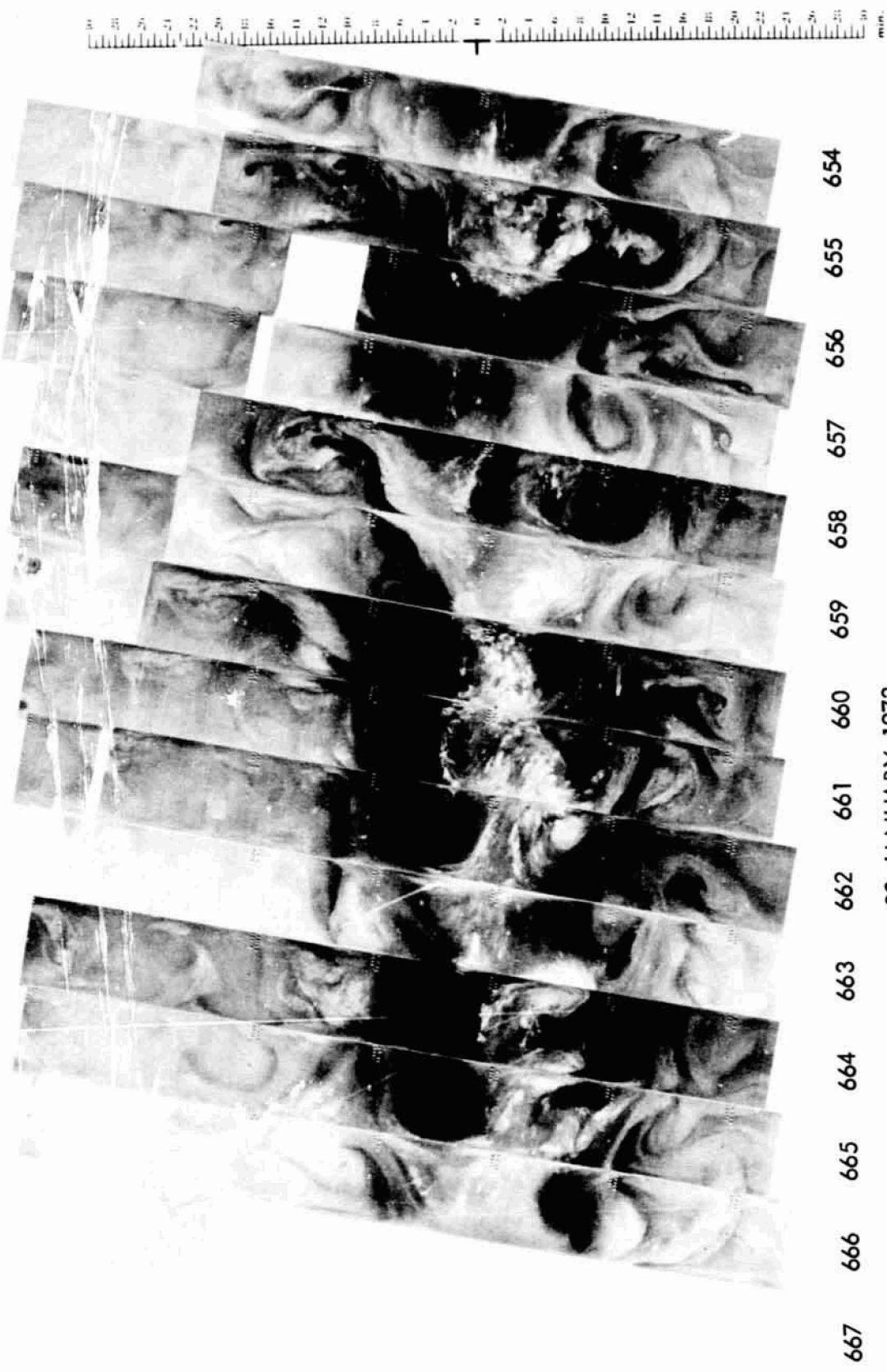
4-85

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.



29 JANUARY 1973

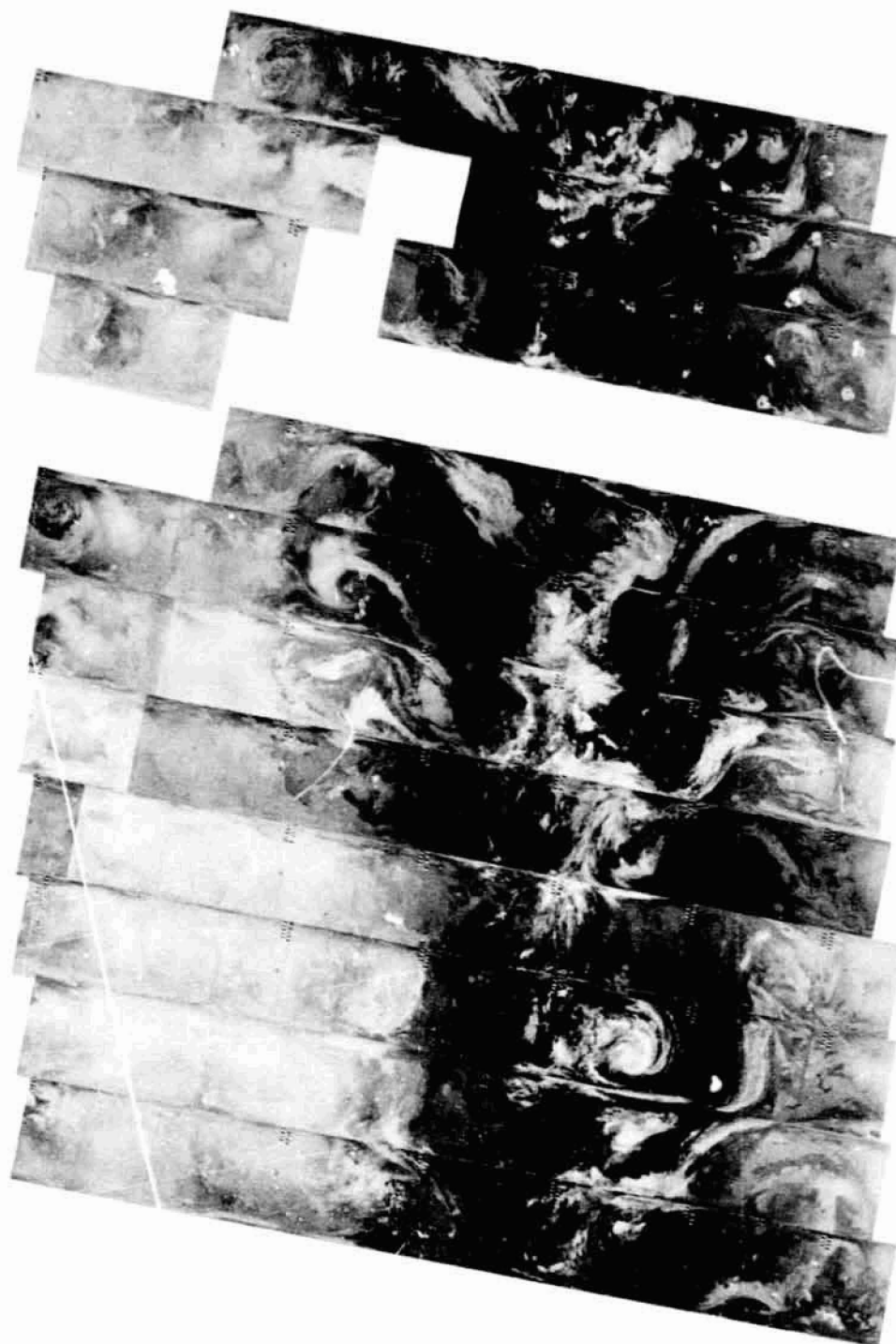
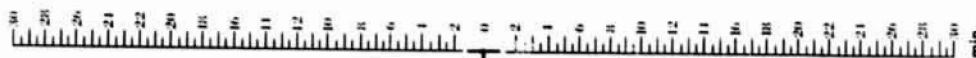
11.5 μ m



654 655 656 657 658 659 660 661 662 663 664 665 666 667

29 JANUARY 1973

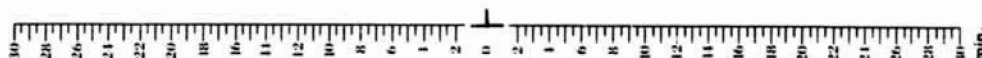
6.7 μ m



680 679 678 677 676 675 674 673 672 671 670 669 668

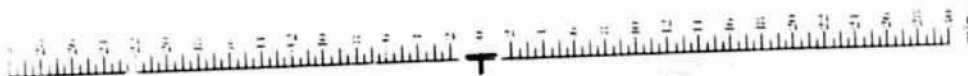
30 JANUARY 1973

11.5 μ m



4-88

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



668

669

670

671

672

673

674

675

676

677

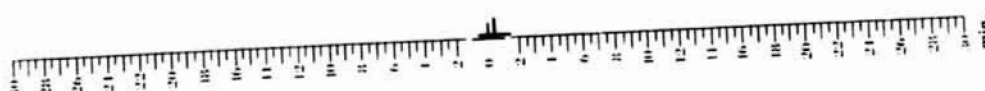
678

679

680

30 JANUARY 1973

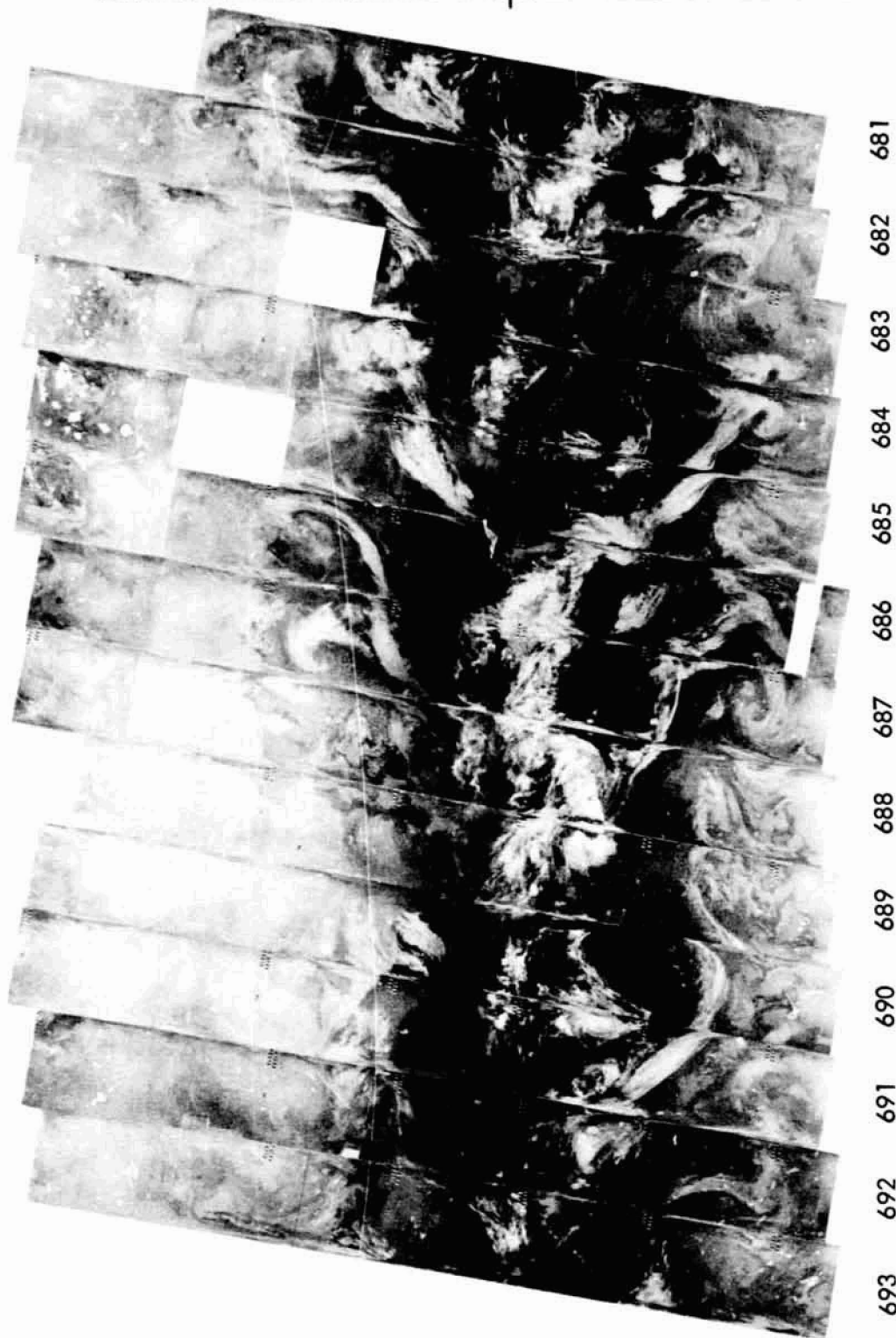
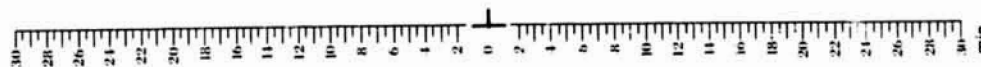
6.7 μ m



4-89

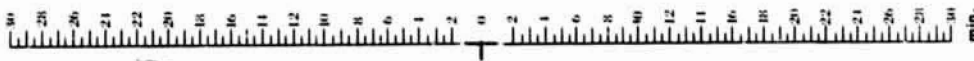
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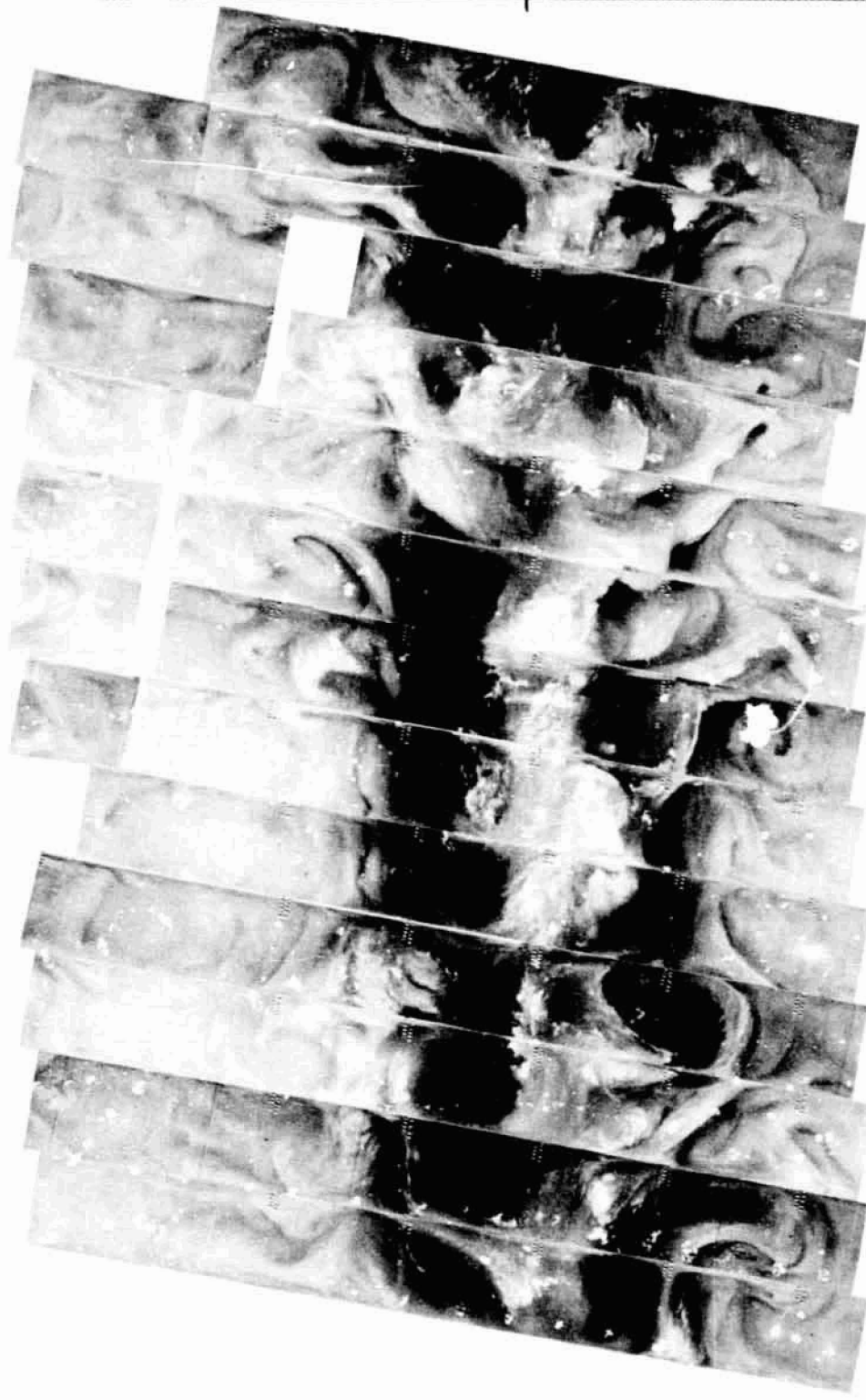
4-90



31 JANUARY 1973

11.5 μ m

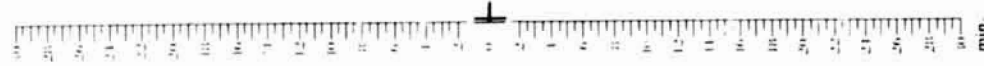
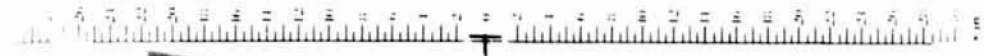




681 682 683 684 685 686 687 688 689 690 691 692 693

31 JANUARY 1973

6.7 μ m



SECTION 4.2
TEMPERATURE HUMIDITY INFRARED RADIOMETER
DAYTIME MONTAGES

PRECEDING PAGE BLANK NOT FILMED

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



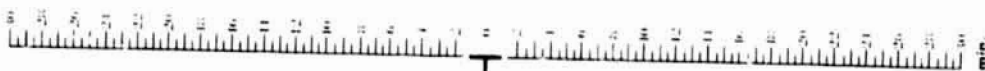
116 115 114 113 112 111 110 109 108 107 106 105 104

19 DECEMBER 1972
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

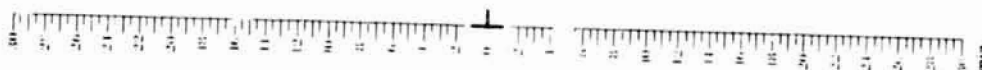
4-94

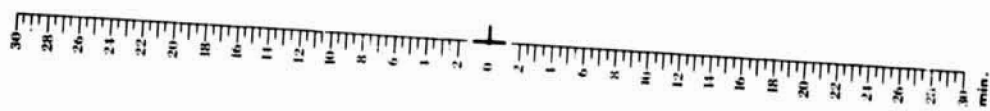
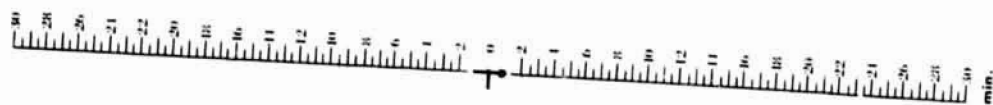
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.



116 115 114 113 112 111 110 109 108 107 106 105 104

19 DECEMBER 1972
6.7 μ m

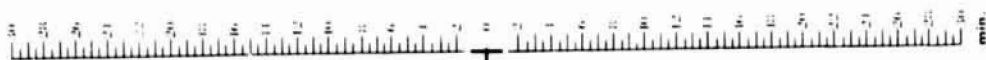




4-96

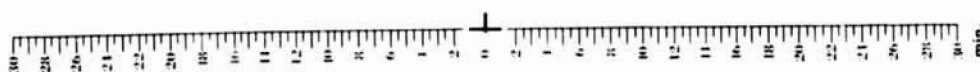
130 129 128 127 126 125 124 123 122 121 120 119 118 117

20 DECEMBER 1972
11.5 μ m



117 118 119 120 121 122 123 124 125 126 127 128 129 130

20 DECEMBER 1972
6.7 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



131 132 133 134 135 136 137 138 139 140 141 142 143

21 DECEMBER 1972
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

30 25 20 15 10 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.



131 132 133 134 135 136 137 138 139 140 141 142 143

21 DECEMBER 1972

6.7 μ m

30 25 20 15 10 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

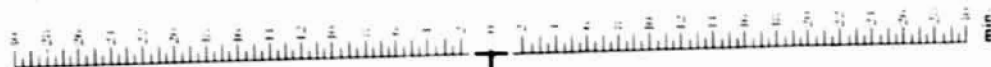


30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-100

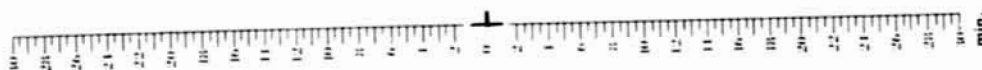
144 145 146 147 148 149 150 151 152 153 154 155 156 157

22 DECEMBER 1972
11.5 μ m



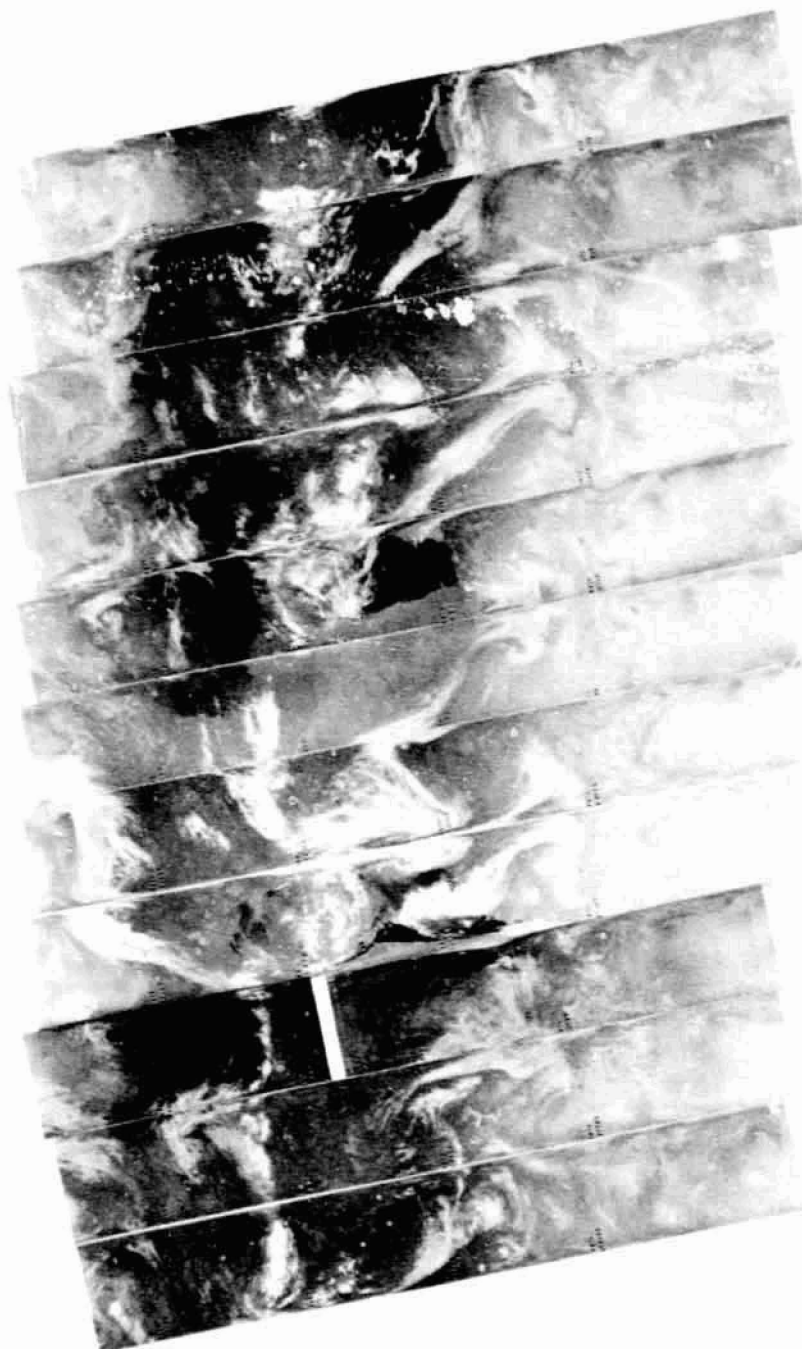
144 145 146 147 148 149 150 151 152 153 154 155 156 157

22 DECEMBER 1972
6.7 μ m



4-101

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



158 159 160 161 162 163 164 165 166 167 168 169 170

23 DECEMBER 1972

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-102

min.



158 159 160 161 162 163 164 165 166 167 168 169 170

23 DECEMBER 1972
6.7 μ m

min.

4-103

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

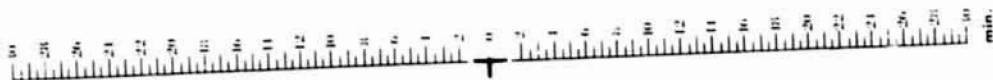


183 182 181 180 179 178 177 176 175 174 173 172 171

24 DECEMBER 1972
11.5 μ m

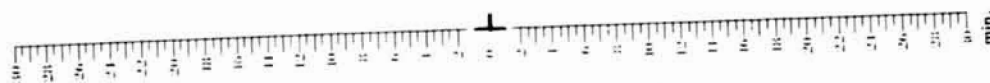
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-104

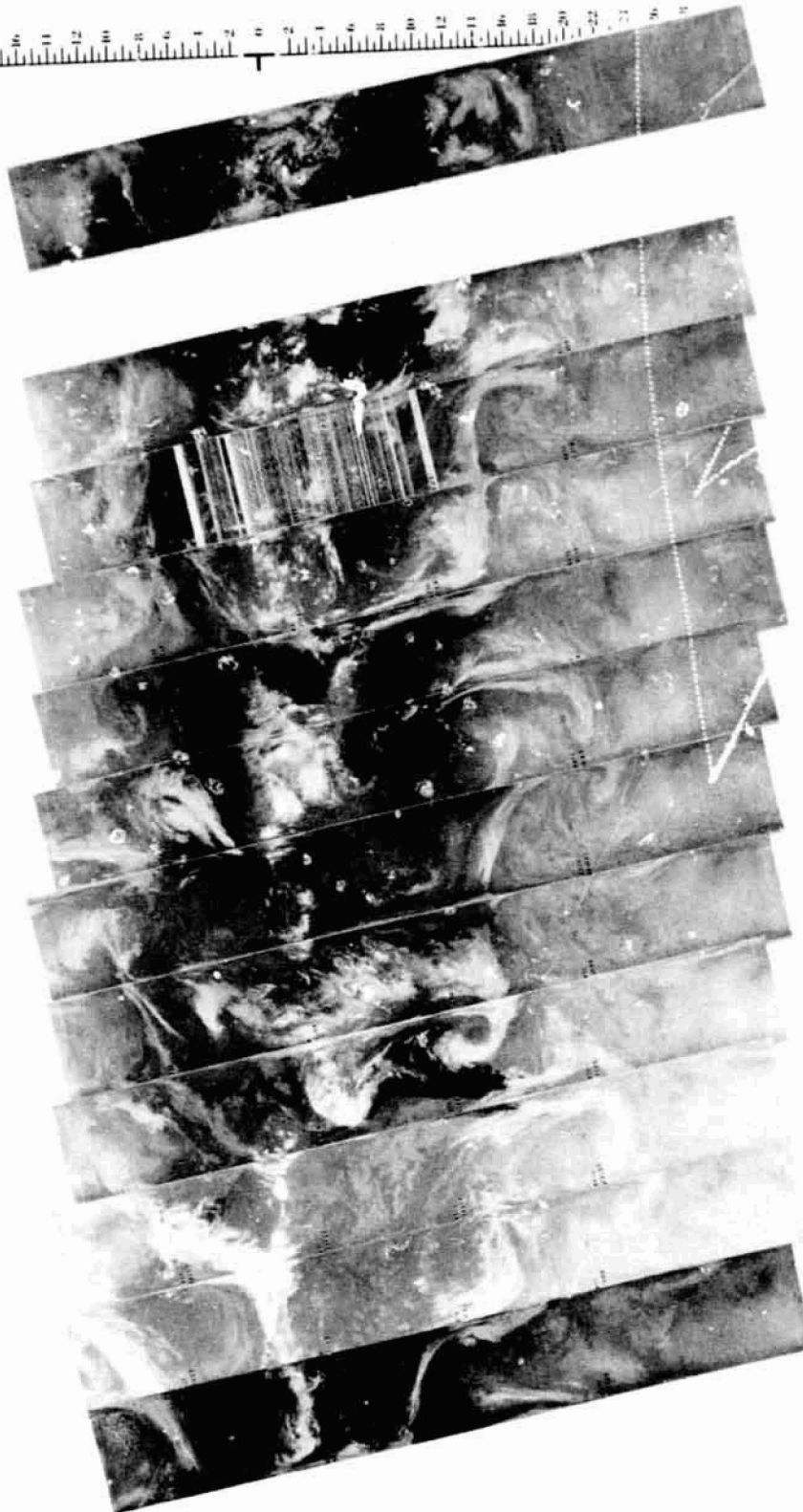
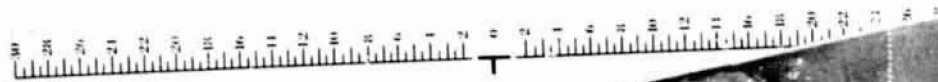


183 182 181 180 179 178 177 176 175 174 173 172 171

24 DECEMBER 1972
6.7 μ m

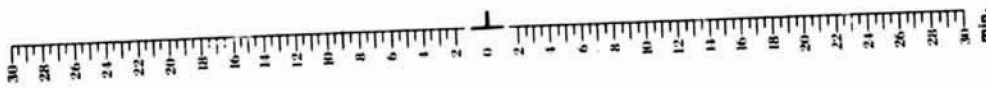


4-105



197 196 195 194 193 192 191 190 189 188 187 186 185 184

25 DECEMBER 1972
11.5 μm



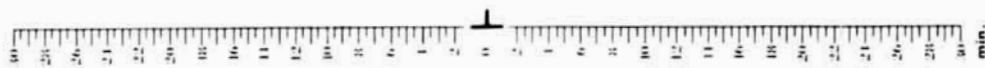
4-106



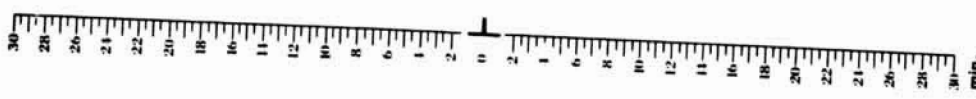
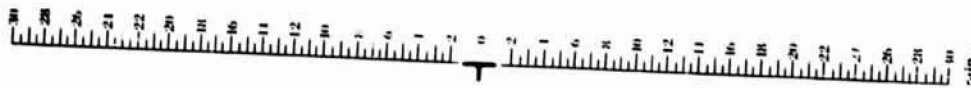
184 185 186 187 188 189 190 191 192 193 194 195 196 197

25 DECEMBER 1972

6.7 μ m



4-107

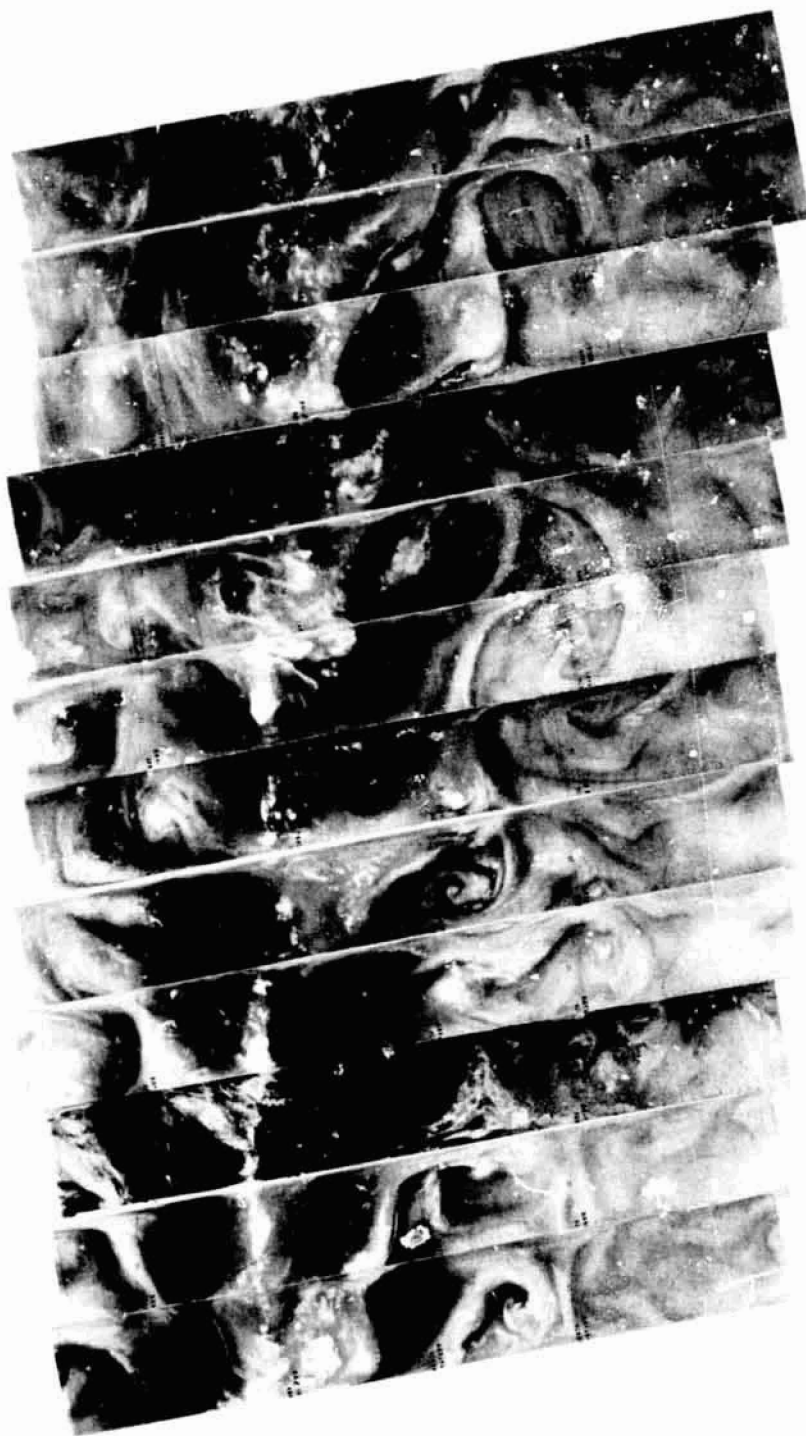
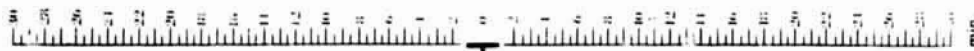


4-108

210 209 208 207 206 205 204 203 202 201 200 199 198

26 DECEMBER 1972

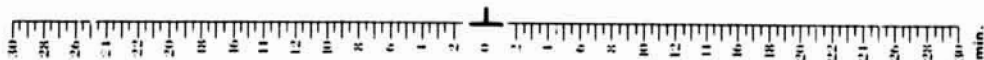
11.5 μ m



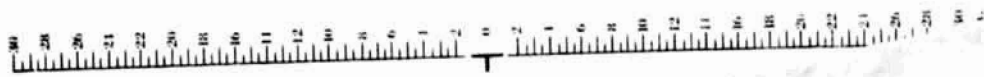
198 199 200 201 202 203 204 205 206 207 208 209 210

26 DECEMBER 1972

6.7 μ m

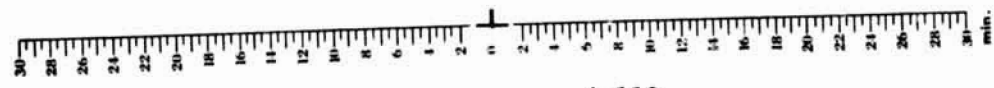


4-109

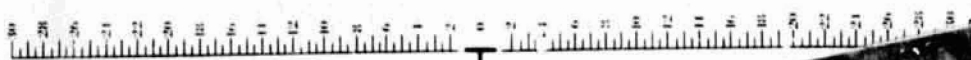


211 212 213 214 215 216 217 218 219 220 221 222 223 224

27 DECEMBER 1972
11.5 μ m



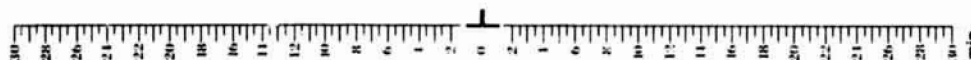
4-110



224 223 222 221 220 219 218 217 216 215 214 213 212 211

27 DECEMBER 1972

6.7 μ m



4-111

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

237 236 235 234 233 232 231 230 229 228 227 226 225

28 DECEMBER 1972
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



237 236 235 234 233 232 231 230 229 228 227 226 225

28 DECEMBER 1972
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-113

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-114

251 250 249 248 247 246 245 244 243 242 241 240 239 238

29 DECEMBER 1972
11.5 μ m

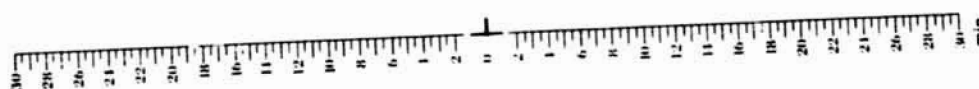
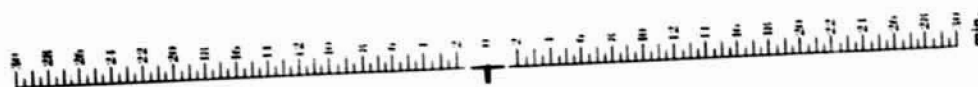
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.



251 250 249 248 247 246 245 244 243 242 241 240 239 238

29 DECEMBER 1972
6.7 μ m

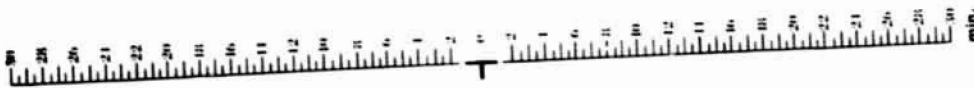
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.



4-116

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

252 253 254 255 256 257 258 259 260 261 262 263 264
30 DECEMBER 1972
11.5 μ m



252

253

254

255

256

257

258

259

260

261

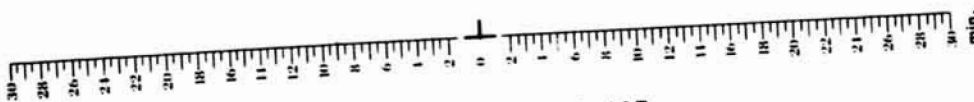
262

263

264

30 DECEMBER 1972

6.7 μ m



4-117

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



277 276 275 274 273 272 271 270 269 268 267 266 265

31 DECEMBER 1972
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-118

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



277 276 275 274 273 272 271 270 269 268 267 266 265

31 DECEMBER 1972
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-119

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



291 290 289 288 287 286 285 284 283 282 281 280 279 278

1 JANUARY 1973
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-120

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



291 290 289 288 287 286 285 284 283 282 281 280 279 278

1 JANUARY 1973

6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.



304 303 302 301 300 299 298 297 296 295 294 293 292

2 JANUARY 1973
11.5 μ m

30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 min.

4-122

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



292 293 294 295 296 297 298 299 300 301 302 303 304

2 JANUARY 1973
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-123

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

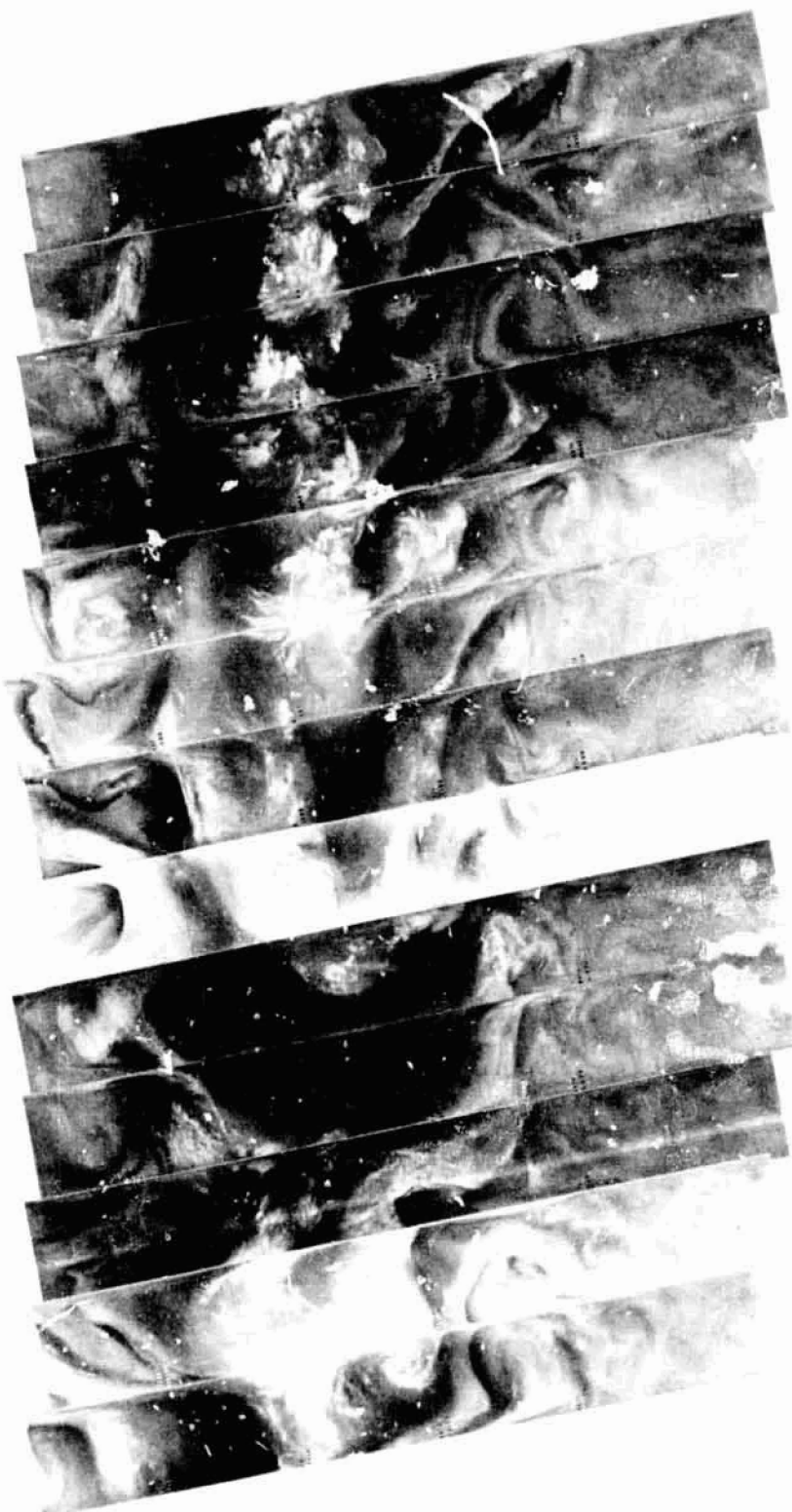
4-124

318 317 316 315 314 313 312 311 310 309 308 307 306 305

3 JANUARY 1973

11.5 μ m

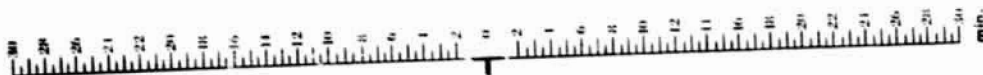
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



305 306 307 308 309 310 311 312 313 314 315 316 317 318

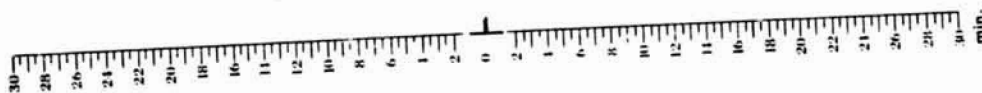
3 JANUARY 1973
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



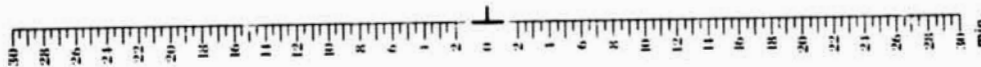
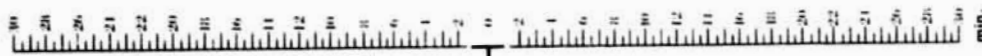
331 330 329 328 327 326 325 324 323 322 321 320 319

4 JANUARY 1973
11.5 μ m



4-126

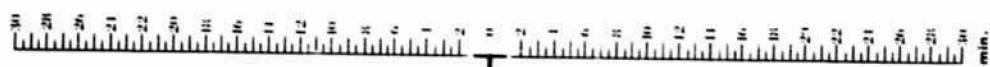
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4-127

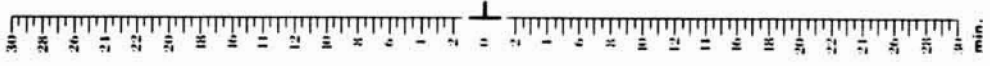
331 330 329 328 327 326 325 324 323 322 321 320 319

4 JANUARY 1973
6.7 μ m



344 343 342 341 340 339 338 337 336 335 334 333 332

5 JANUARY 1973
11.5 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



344 343 342 341 340 339 338 337 336 335 334 333 332

5 JANUARY 1973
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-129

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

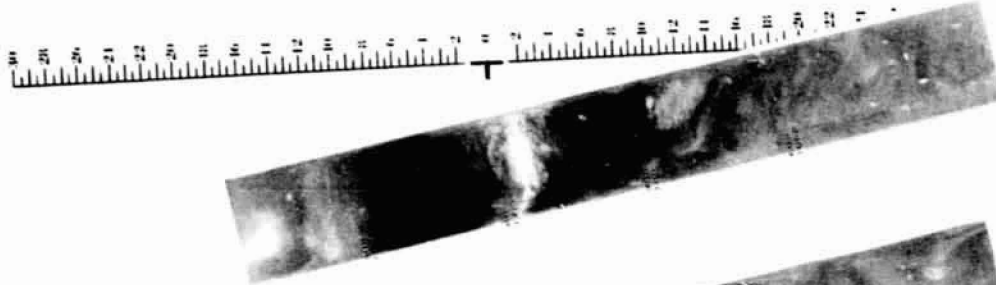
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30



345 346 347 348 349 350 351 352 353 354 355 356 357 358

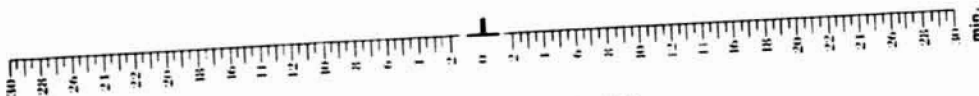
6 JANUARY 1973
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



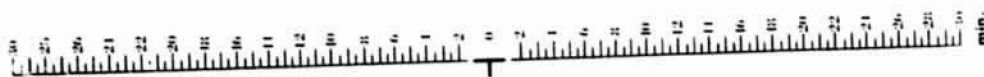
345 346 347 348 349 350 351 352 353 354 355 356 357 358

6 JANUARY 1973
6.7 μ m



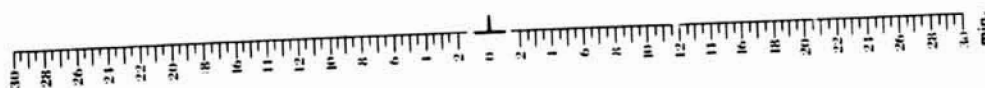
4-131

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



359 360 361 362 363 364 365 366 367 368 369 370 371

7 JANUARY 1973
11.5 μ m



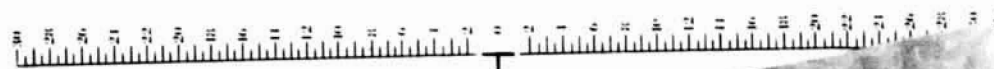
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



359 360 361 362 363 364 365 366 367 368 369 370 371

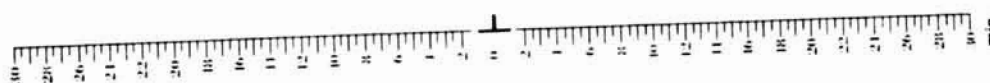
7 JANUARY 1973
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

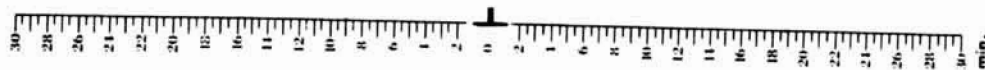


372 373 374 375 376 377 378 379 380 381 382 383 384 385

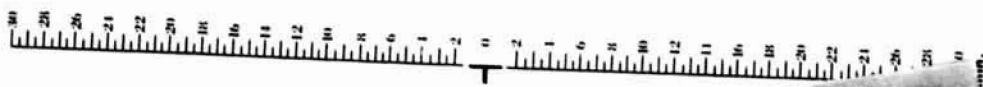
8 JANUARY 1973
11.5 μm



4-134

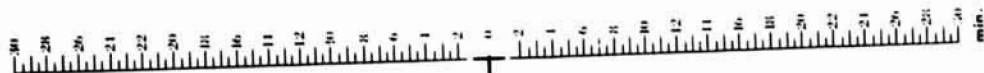


4-135



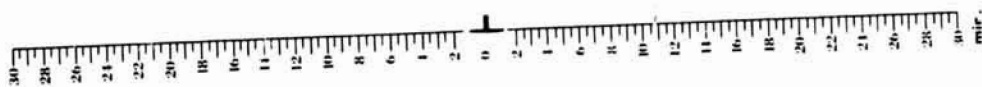
385 384 383 382 381 380 379 378 377 376 375 374 373 372

8 JANUARY 1973
6.7 μm



398 397 396 395 394 393 392 391 390 389 388 387 386

9 JANUARY 1973
11.5 μ m



4-136

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



398 397 396 395 394 393 392 391 390 389 388 387 386

9 JANUARY 19/3
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



412 411 410 409 408 407 406 405 404 403 402 401 400 399

10 JANUARY 1973

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-138

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



412 411 410 409 408 407 406 405 404 403 402 401 400 399

10 JANUARY 1973

6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-139

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

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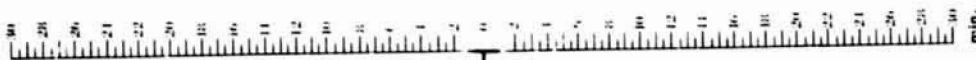
425 424 423 422 421 420 419 418 417 416 415 414 413

11 JANUARY 1973
11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-140

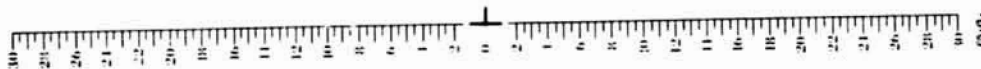
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



425 424 423 422 421 420 419 418 417 416 415 414 413

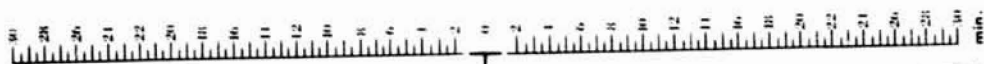
11 JANUARY 1973

6.7 μ m



4-141

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



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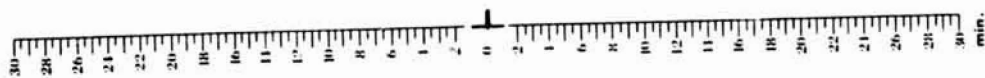
436

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12 JANUARY 1973

11.5 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



438 437 436 435 434 433 432 431 430 429 428 427 426

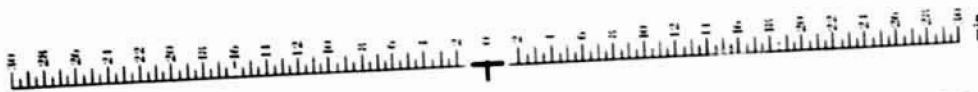
12 JANUARY 1973

6.7 μm

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-143

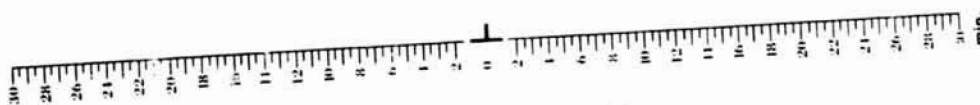
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



452 451 450 449 448 447 446 445 444 443 442 441 440 439

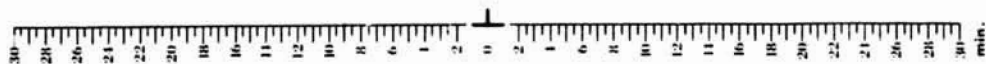
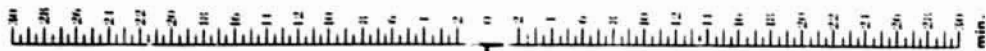
13 JANUARY 1973

11.5 μ m



4-144

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



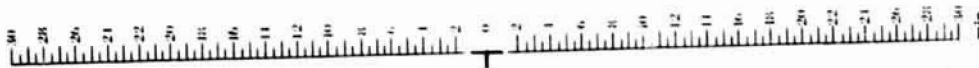
4-145

439 440 441 442 443 444 445 446 447 448 449 450 451 452

13 JANUARY 1973

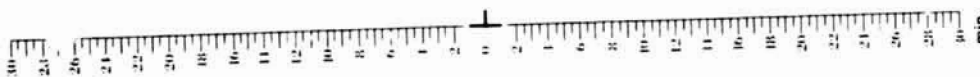
6.7 μm

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



465 464 463 462 461 460 459 458 457 456 455 454 453

14 JANUARY 1973
11.5 μ m



4-146

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



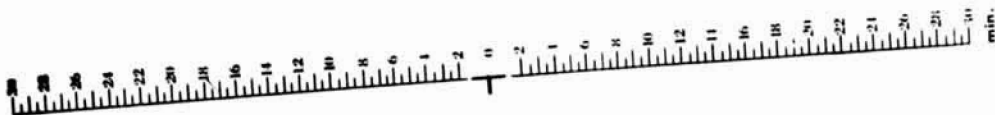
453 454 455 456 457 458 459 460 461 462 463 464 465

14 JANUARY 1973
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-147

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



466 467 468 469 470 471 472 473 474 475 476 477 478 479

15 JANUARY 1973

11.5 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



466 467 468 469 470 471 472 473 474 475 476 477 478 479

15 JANUARY 1973
6.7 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-149

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



492 491 490 489 488 487 486 485 484 483 482 481 480

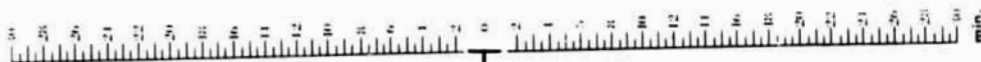
16 JANUARY 1973

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-150

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



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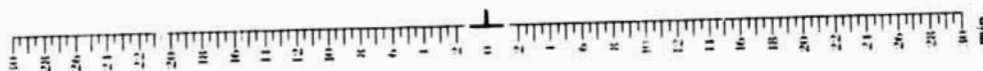
490

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16 JANUARY 1973

6.7 μ m



4-151

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



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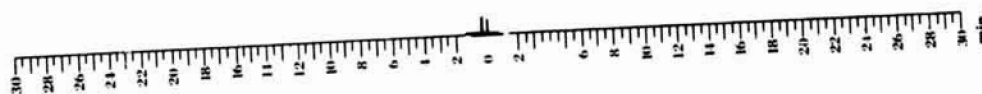
504

505

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17 JANUARY 1973

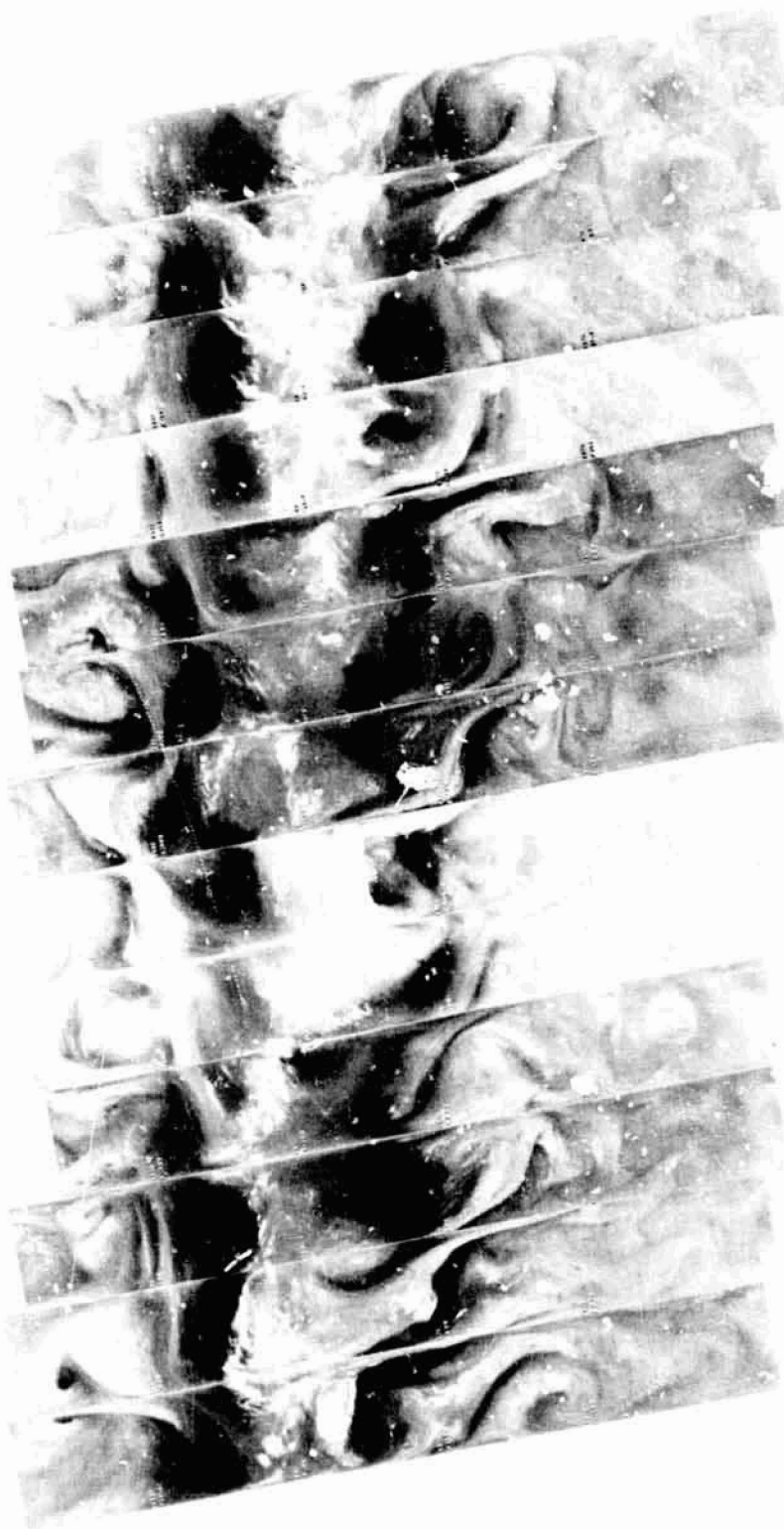
1.5 μ m



4-152

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 mm.

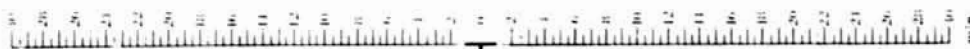


506 505 504 503 502 501 500 499 498 497 496 495 494 493

17 JANUARY 1973

6.7 μ m

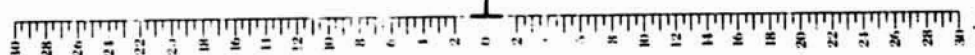
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 mm.

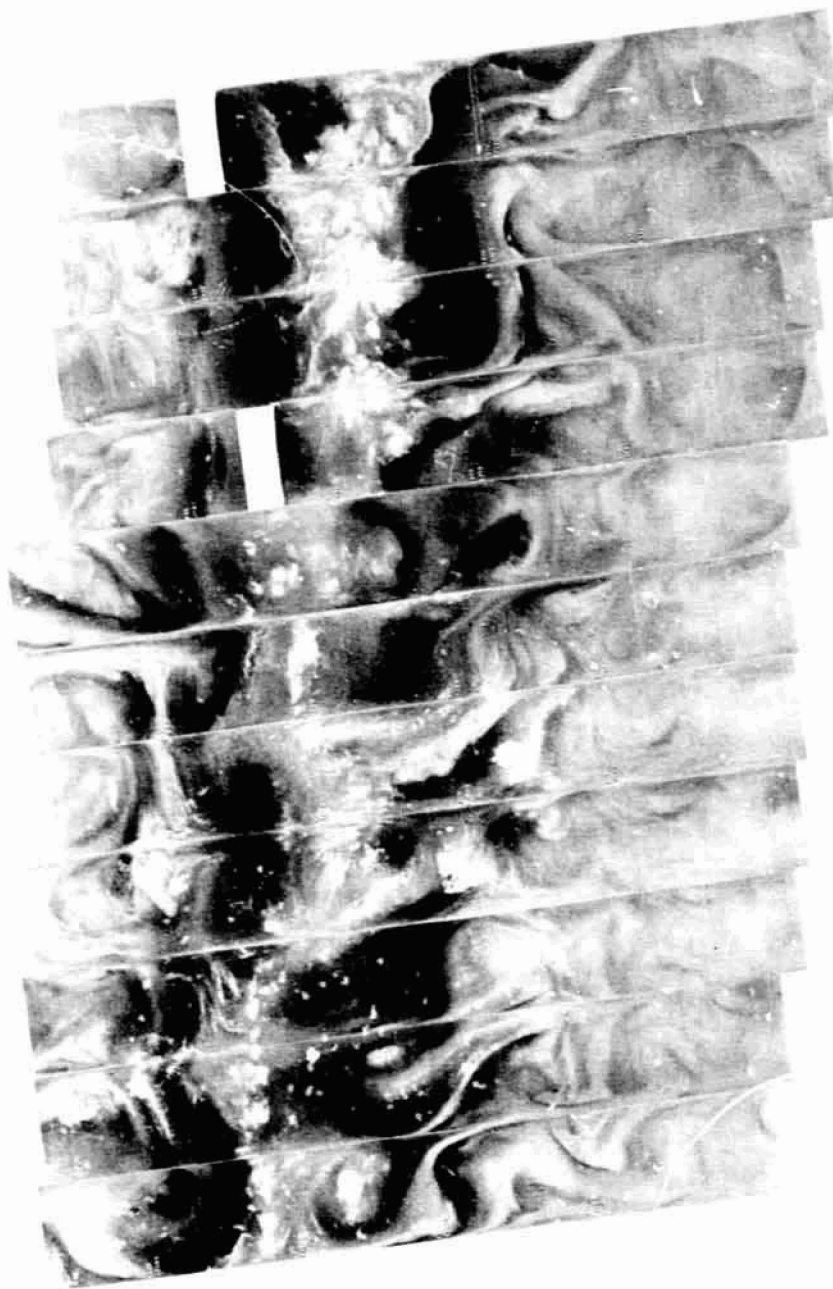
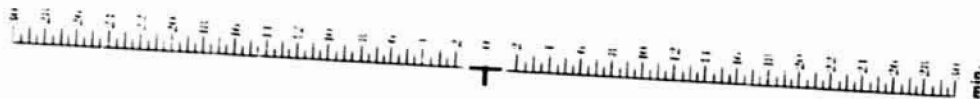


519 518 517 516 515 514 513 512 511 510 509 508 507

18 JANUARY 1973

11.5 μ m

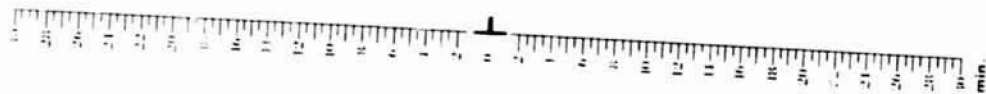




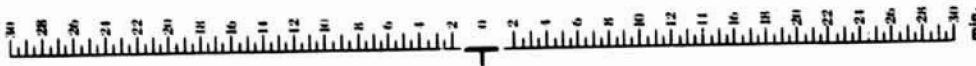
519 518 517 516 515 514 513 512 511 510 509 508 507

18 JANUARY 1973

6.7 μm



4-155



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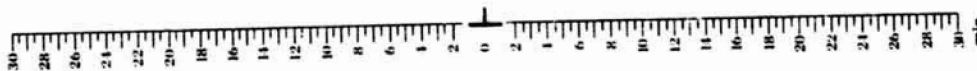
530

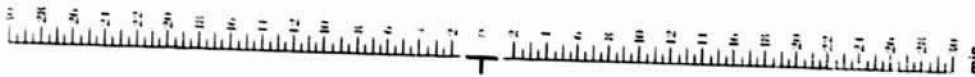
531

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19 JANUARY 1973

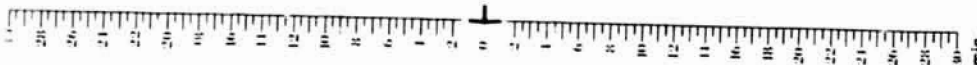
11.5 μ m





532 531 530 529 528 527 526 525 524 523 522 521 520

19 JANUARY 1973
6.7 μ m



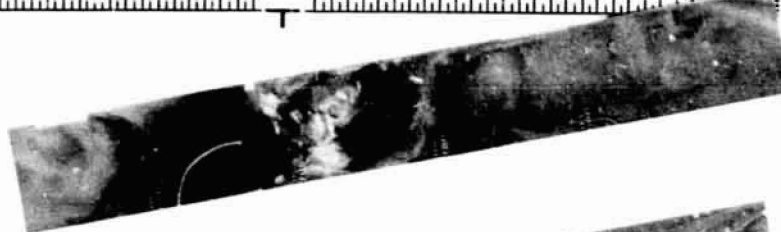
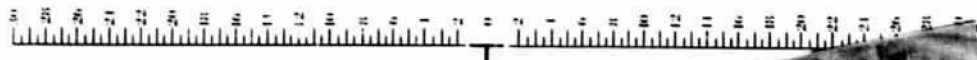
4-157



533 534 535 536 537 538 539 540 541 542 543 544 545 546

20 JANUARY 1973

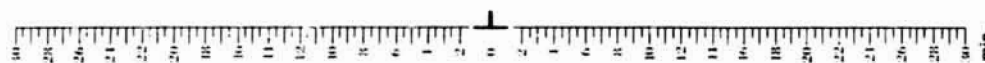
11.5 μ m

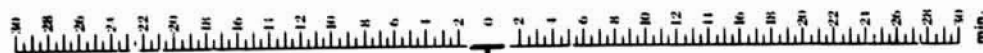


533 534 535 536 537 538 539 540 541 542 543 544 545 546

20 JANUARY 1973

6.7 μ m

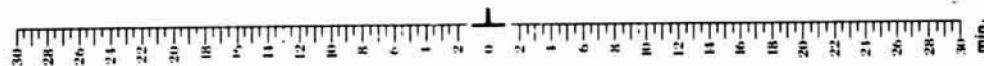




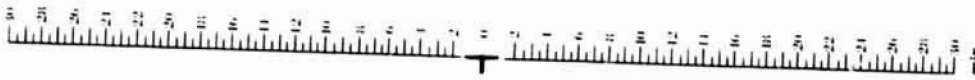
559 558 557 556 555 554 553 552 551 550 549 548 547

21 JANUARY 1973

11.5 μm



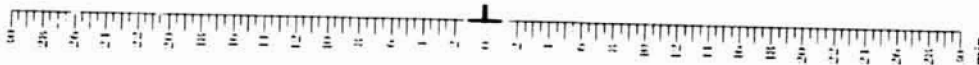
4-160



547 548 549 550 551 552 553 554 555 556 557 558 559

21 JANUARY 1973

6.7 μm



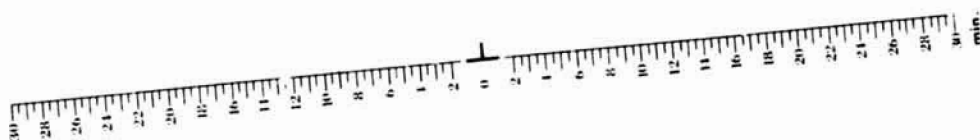
4-161

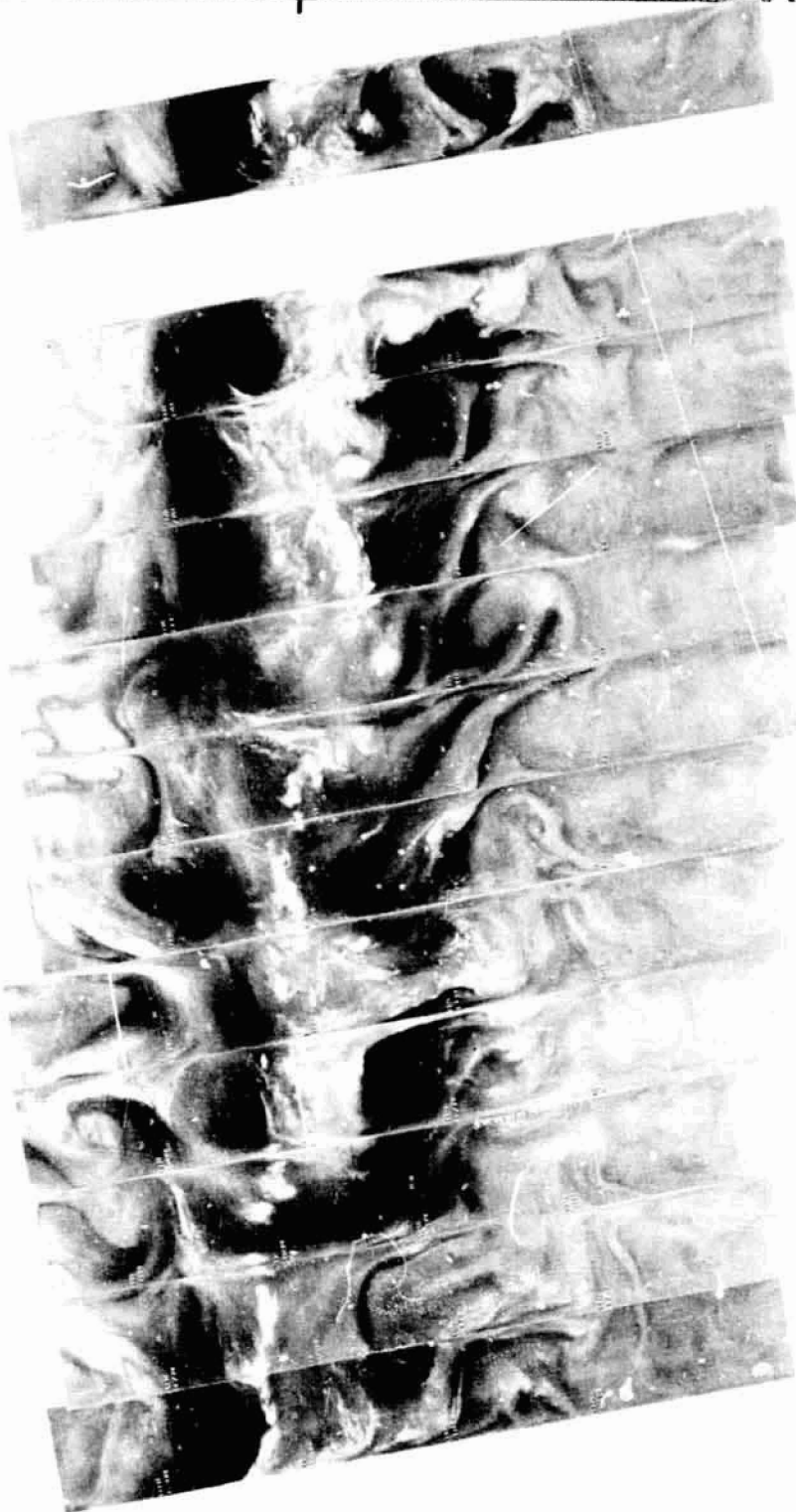
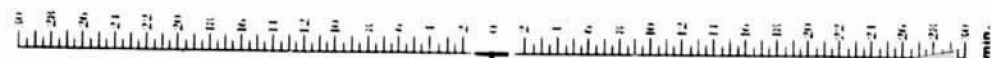


560 561 562 563 564 565 566 567 568 569 570 571 572 573

22 JANUARY 1973

11.5 μ m

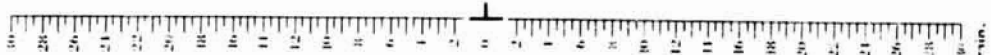




573 572 571 570 569 568 567 566 565 564 563 562 561 560

22 JANUARY 1973

6.7 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

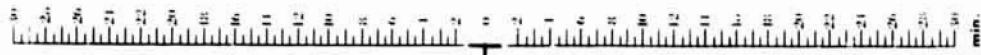


586 585 584 583 582 581 580 579 578 577 576 575 574

23 JANUARY 1973

11.5 μ m

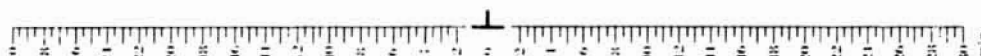
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



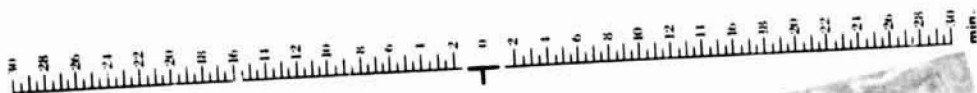
586 585 584 583 582 581 580 579 578 577 576 575 574

23 JANUARY 1973

6.7 μ m



4-165



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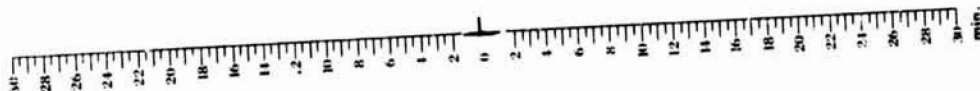
598

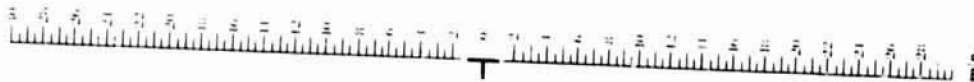
599

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24 JANUARY 1973

11.5 μ m

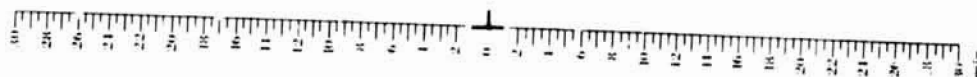




600 599 598 597 596 595 594 593 592 591 590 589 588 587

24 JANUARY 1973

6.7 μ m



4-167

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



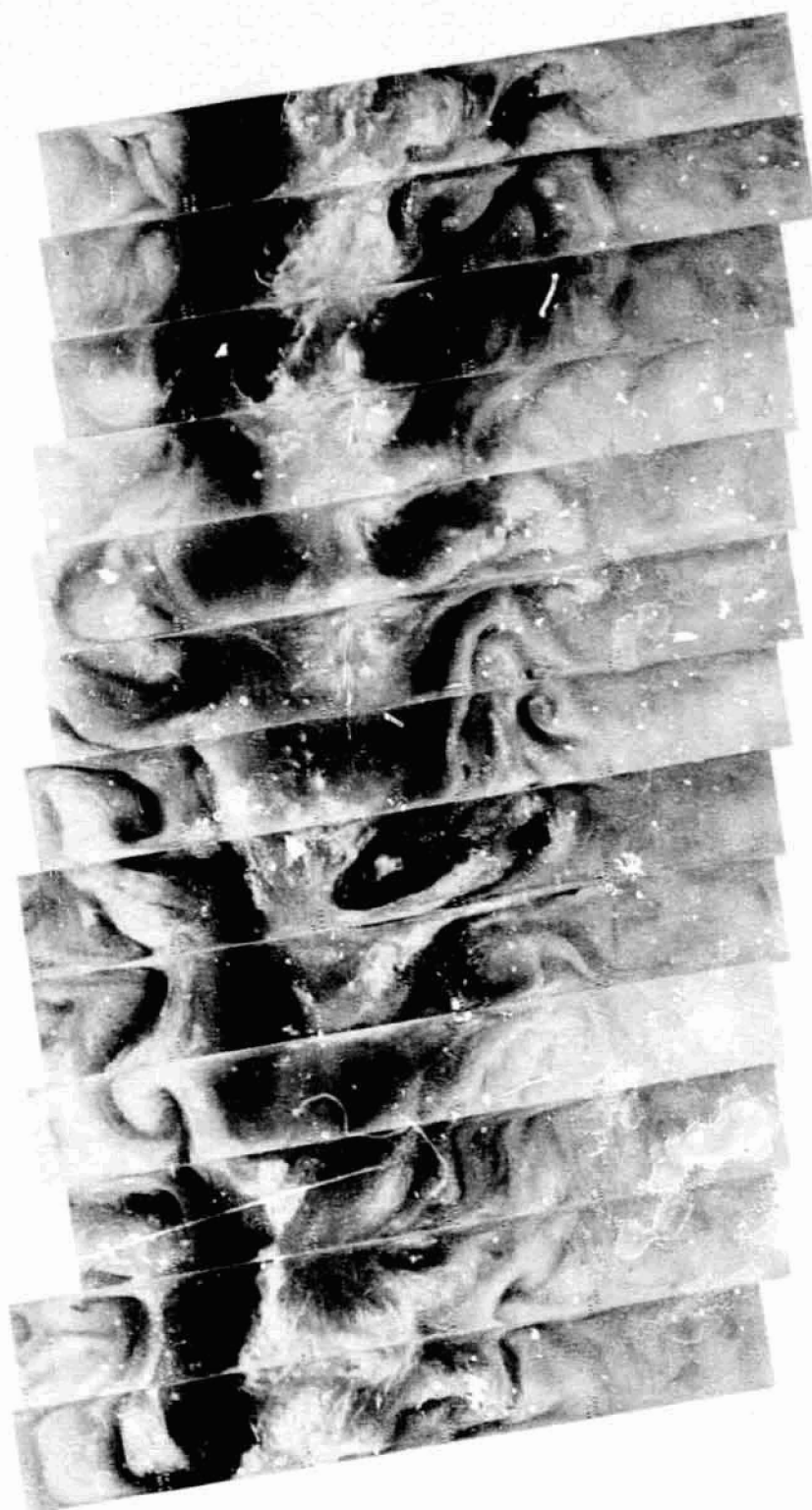
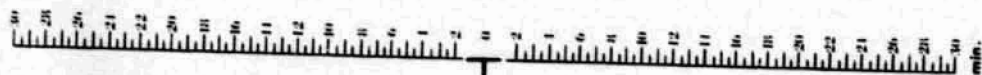
613 612 611 610 609 608 607 606 605 604 603 602 601

25 JANUARY 1973

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

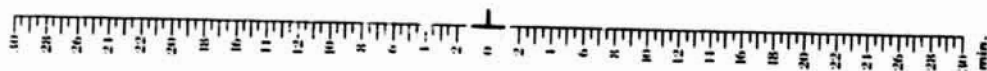
4-168



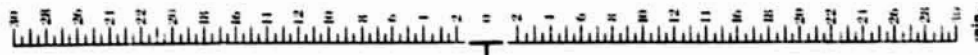
613 612 611 610 609 608 607 606 605 604 603 602 601

25 JANUARY 1973

6.7 μ m



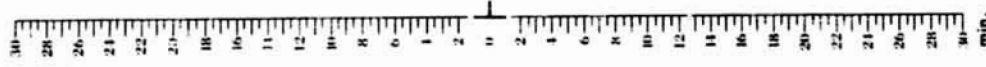
4-169

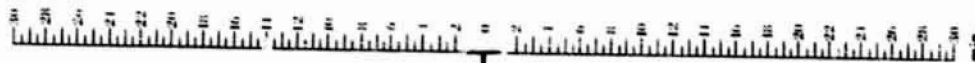


614 615 616 617 618 619 620 621 622 623 624 625 626

26 JANUARY 1973

11.5 μ m

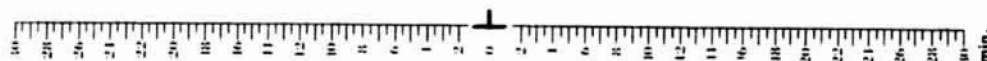




626 625 624 623 622 621 620 619 618 617 616 615 614

26 JANUARY 1973

6.7 μm



4-171

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
min.

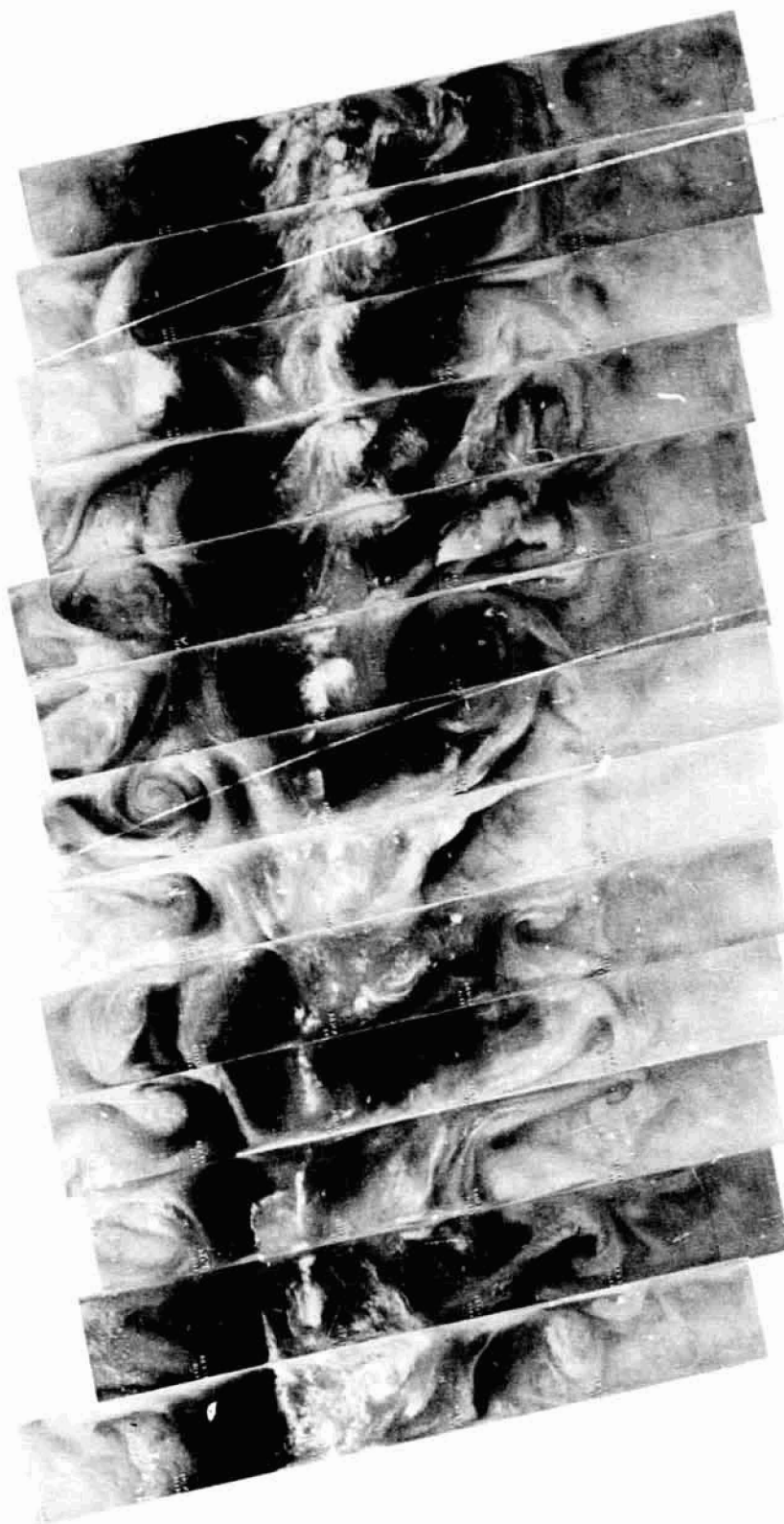
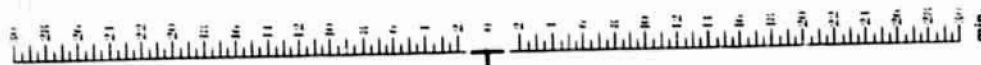


640 639 638 637 636 635 634 633 632 631 630 629 628 627

27 JANUARY 1973
11.5 μ m

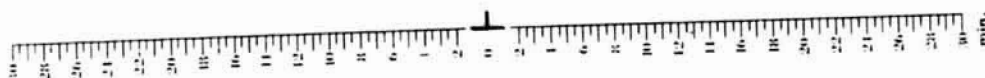
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
min.

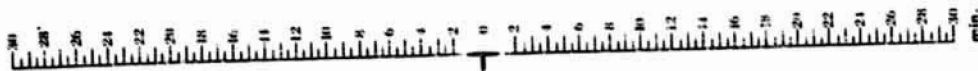
4-172



627 628 629 630 631 632 633 634 635 636 637 638 639 640

27 JANUARY 1973
6.7 μ m





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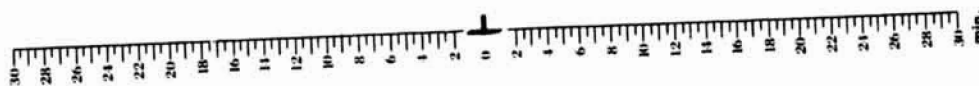
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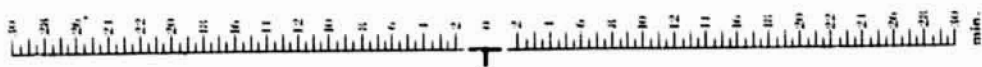
652

653

28 JANUARY 1973

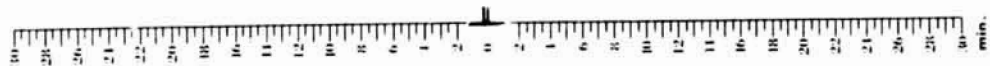
11.5 μ m





653 652 651 650 649 648 647 646 645 644 643 642 641

28 JANUARY 1973
6.7 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.



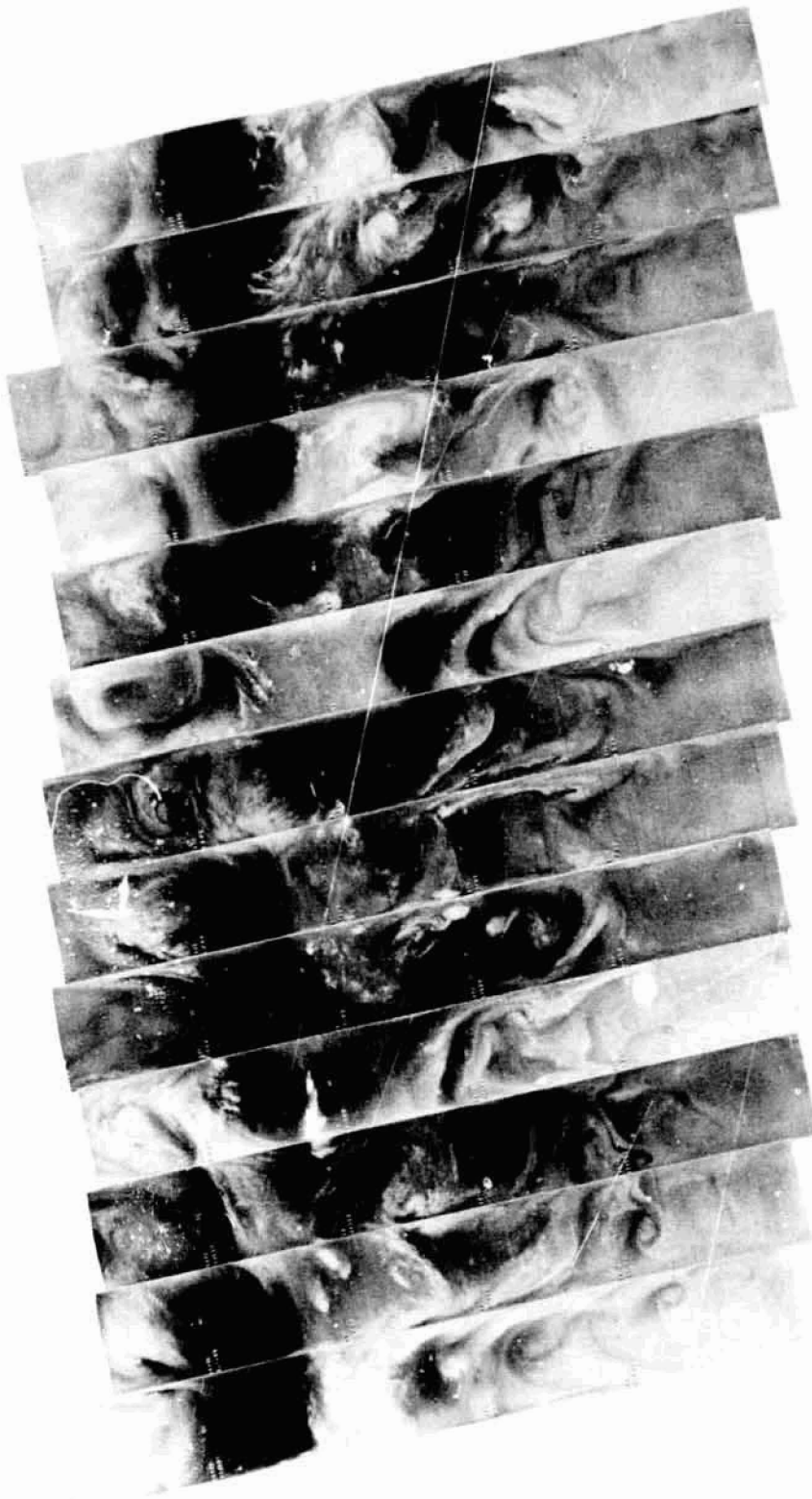
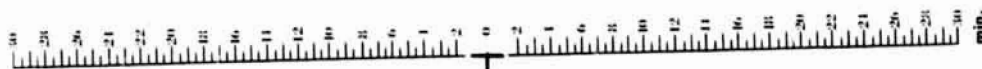
30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 min.

4-176

667 666 665 664 663 662 661 660 659 658 657 656 655 654

29 JANUARY 1973

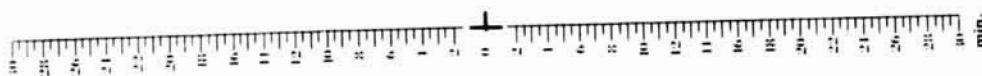
11.5 μ m



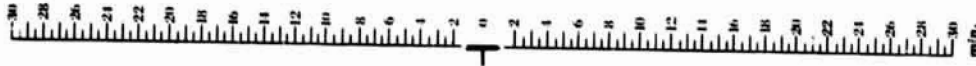
654 655 656 657 658 659 660 661 662 663 664 665 666 667

29 JANUARY 1973

6.7 μ m



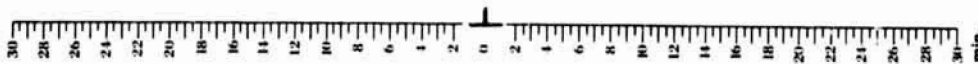
4-177

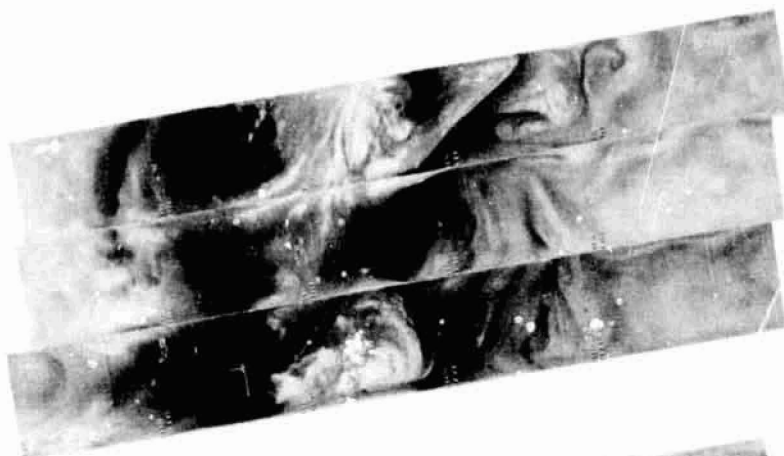
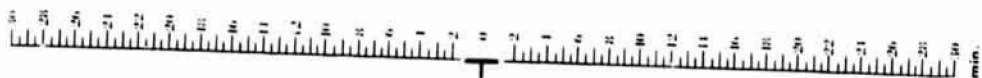


680 679 678 677 676 675 674 673 672 671 670 669 668

30 JANUARY 1973

11.5 μ m





668

669

670

671

672

673

674

675

676

677

678

679

680

30 JANUARY 1973

6.7 μ m



30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 miles.

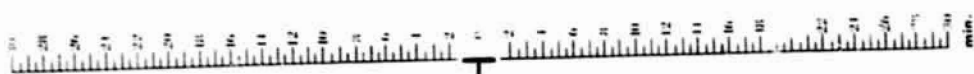


693 692 691 690 689 688 687 686 685 684 683 682 681

31 JANUARY 1973

11.5 μ m

30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 miles.



681

682

683

684

685

686

687

688

689

690

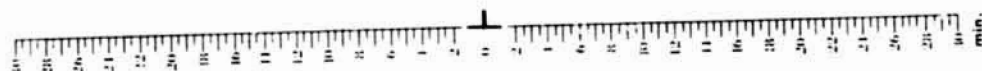
691

692

693

31 JANUARY 1973

6.7 μ m



SECTION 5

CORRECTIONS TO THE NIMBUS 5 USER'S GUIDE

This section provides corrections or additions to The Nimbus 5 User's Guide. Corrections are listed where necessary. If additional corrections are required, they will appear in the subsequent catalog. All previous corrections will be carried forward cumulatively into each new catalog.

5.1 Table Corrections to the User's Guide

Table 5-1

This table is identical to Table 2-3 (page 31) in The Nimbus 5 User's Guide.

Table 2-3

**THIR OUTPUT VOLTAGES VERSUS EQUIVALENT BLACKBODY
TEMPERATURES AT DIFFERENT BOLOMETER
TEMPERATURES FOR THE 11.5 μ m CHANNEL.**

		Bolometer Temperature (°C)				
		0	10	20	30	40
Blackbody Temperature (°K)	0*	-0.405	-0.407	-0.413	-0.421	-0.425
	180	-0.618	-0.617	-0.617	-0.617	-0.606
	190	-0.711	-0.709	-0.706	-0.702	-0.685
	200	-0.829	-0.825	-0.820	-0.811	-0.786
	210	-0.976	-0.970	-0.961	-0.946	-0.911
	220	-1.153	-1.144	-1.130	-1.109	-1.062
	230	-1.363	-1.351	-1.332	-1.302	-1.240
	240	-1.606	-1.591	-1.565	-1.526	-1.448

*Space level

Table 2-3 (Continued)

		Bolometer Temp. (°C)				
		0	10	20	30	40
Blackbody Temperature (°K)	250	-1.886	-1.867	-1.834	-1.783	-1.686
	260	-2.202	-2.178	-2.137	-2.074	-1.955
	270	-2.555	-2.526	-2.476	-2.399	-2.256
	280	-2.946	-2.911	-2.851	-2.759	-2.589
	290	-3.375	-3.334	-3.262	-3.153	-2.954
	300	-3.841	-3.793	-3.709	-3.582	-3.352
	310	-4.345	-4.289	-4.192	-4.045	-3.781
	320	-4.886	-4.822	-4.711	-4.543	-4.241
	330	-5.463	-5.391	-5.264	-5.074	-4.733

Table 5-2

This table replaces Table 2-4 (page 32) in The Nimbus 5 User's Guide.

Table 2-4

THIR OUTPUT VOLTAGES VERSUS EQUIVALENT BLACKBODY
TEMPERATURES AT DIFFERENT BOLOMETER
TEMPERATURES FOR THE 6.7 μ m CHANNEL

		Bolometer Temp. (°C)				
		0	10	20	30	40
Blackbody Temperature (°K)	0*	-0.507	-0.518	-0.532	-0.556	-0.576
	180	-0.607	-0.618	-0.632	-0.655	-0.674
	185	-0.644	-0.654	-0.669	-0.692	-0.710
	190	-0.692	-0.702	-0.716	-0.739	-0.756
	195	-0.752	-0.762	-0.776	-0.798	-0.814
	200	-0.827	-0.838	-0.851	-0.873	-0.888
	205	-0.921	-0.931	-0.944	-0.966	-0.978
	210	-1.035	-1.045	-1.058	-1.078	-1.089
	215	-1.172	-1.182	-1.195	-1.215	-1.223
	220	-1.337	-1.347	-1.359	-1.379	-1.383
	225	-1.533	-1.543	-1.554	-1.573	-1.573
	230	-1.764	-1.774	-1.784	-1.801	-1.797
	235	-2.033	-2.043	-2.052	-2.068	-2.059

* Space level

Table 2-4 (Continued)

		Bolometer Temp. (°C)				
		0	10	20	30	40
Blackbody temperature (°K)	240	-2.350	-2.355	-2.363	-2.378	-2.362
	245	-2.704	-2.714	-2.721	-2.734	-2.711
	250	-3.115	-3.125	-3.131	-3.142	-3.111
	255	-3.582	-3.592	-3.597	-3.605	-3.565
	260	-4.110	-4.119	-4.122	-4.127	-4.077
	265	-4.704	-4.714	-4.715	-4.717	-4.656
	270	-5.367	-5.378	-5.376	-5.375	-5.300

5.2 SCMR Corrections to the User's Guide

There are no SCMR corrections to the User's Guide for this catalog.

5.3 ESMR Corrections to the User's Guide

Table 4-4, of The Nimbus 5 User's Guide, "ESMR Antenna Loss Ratio-Flight Model" will not be supplied. The antenna properties changed after final calibration and rendered these numbers useless. A set of empirical calibration numbers is being developed which will correct for the effects of antenna loss and side lobes, and the effects of different viewing angles. This will be published in a later catalog.

5.4 ITPR Corrections to the User's Guide

Table 5-3

This Table replaces Table 5-3 (page 125) in The Nimbus 5 User's Guide.

Table 5-3

ITPR CALIBRATION CONSTANTS

$R_S = a_0 + a_1 V^*$		
R_S = radiance of the scene (mw/m ² sterad cm ⁻¹)		
V = digital counts		
Channel	a_0	a_1
1	1.0495	-0.001773
2	141.78	-0.1813
3	166.93	-0.2046
4	173.02	-0.2065
5	174.02	-0.1940
6	174.99	-0.1977
7	170.18	-0.1995

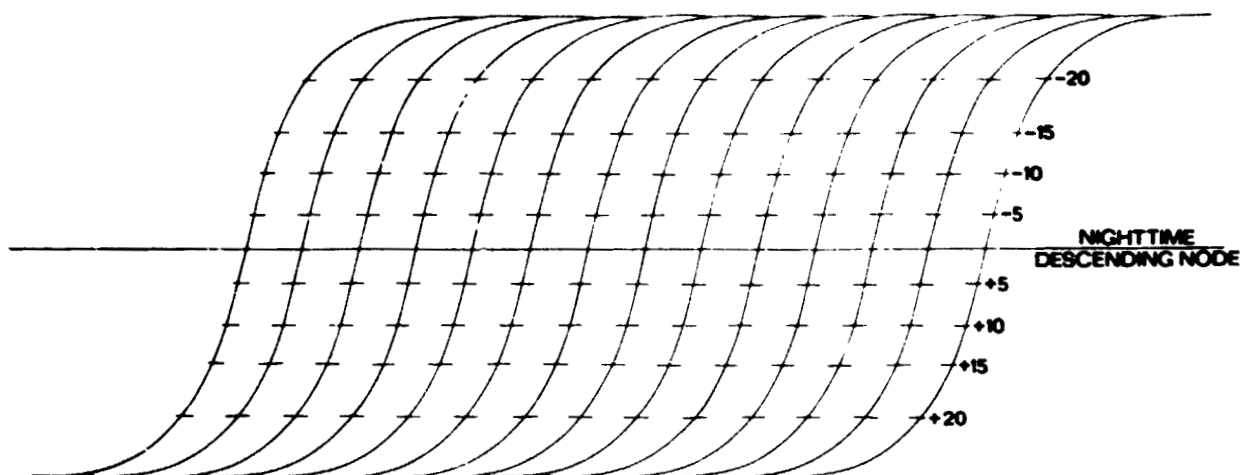
*The calibration constant a_0 now includes the radiance of the chopper reference blackbody.

5.5 SCR Corrections to the User's Guide

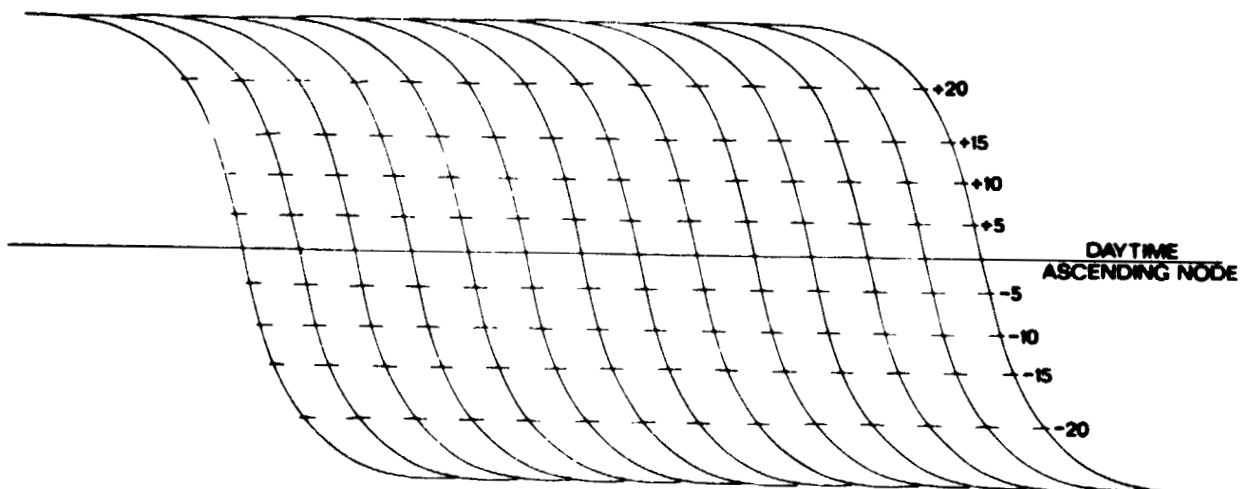
There are no SCR corrections to the User's Guide for this catalog.

5.6 NEMS Corrections to the User's Guide

There are no NEMS corrections to the User's Guide for this catalog.

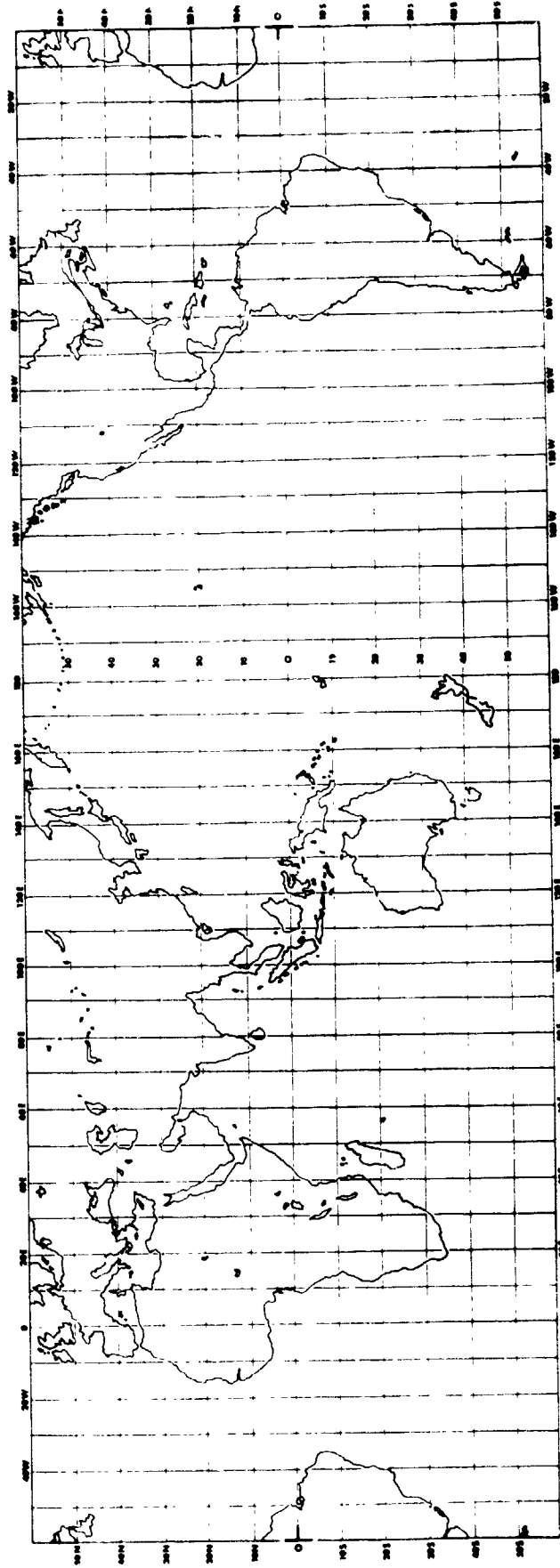


NIMBUS SUBSATELLITE TRACKS OVERLAY



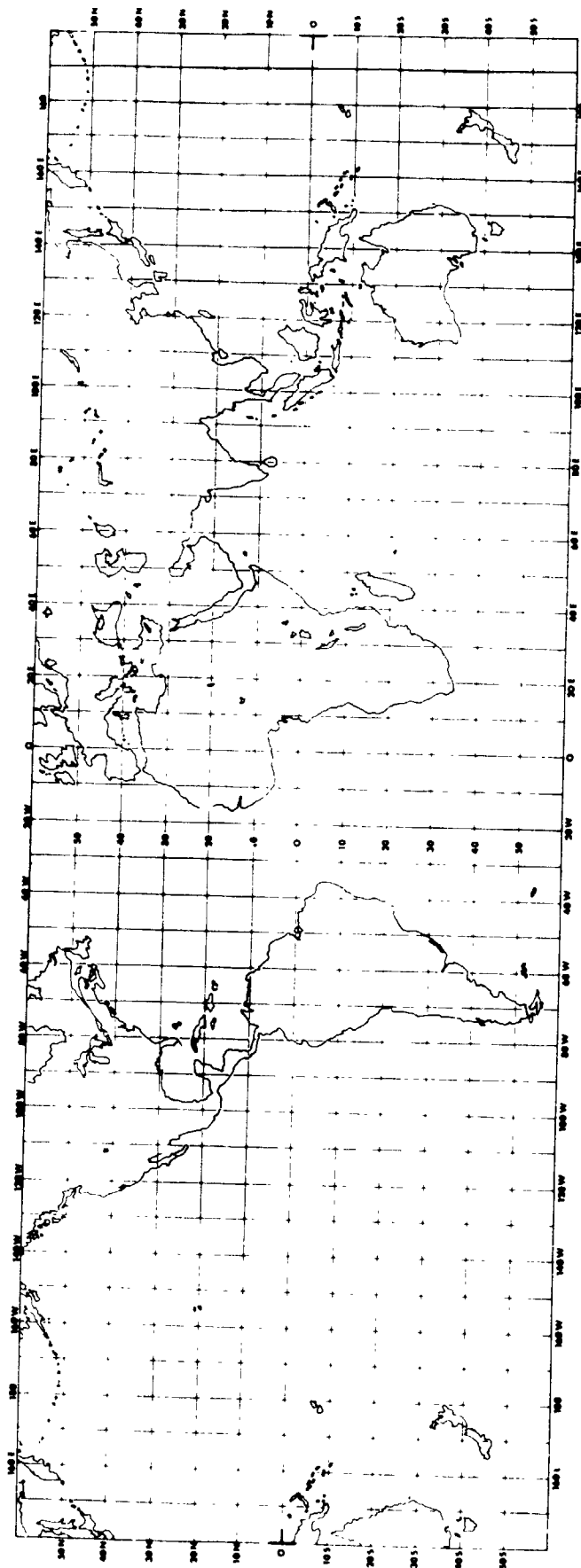
NIMBUS SUBSATELLITE TRACKS OVERLAY

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR,



Location Guide
Average Scale for Nimbus
THIR Nighttime Montages

FILE OF THE ORIGIN PAGE IS POOR



Location Guide
Average Scale for Nimbus
THIR Daytime Montages